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The Mental Health of UK Military Partners and the Variability between Stages of Deployment

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Special thanks go to my Mum and Dad; you gave me strength when I was tired, the support when I needed it most, and you have never stopped believing in me. For helping me escape away from it all, I must say a huge thank you to my husband and I thank my fabulous friends, for whom I couldn't have got through it without. In addition, thank you to all of those that completed this survey, you made this study possible. Last, but certainly not least, the biggest thank you to my supervisors, Rachel, Nima, and Nigel. From keeping me on track to being there whenever I needed you, you have supported and helped me no end and for this, I am forever grateful-thank you!

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Thesis Abstract

Objectives: The purpose of this study was to identify the prevalence of anxiety, depression, stress, perceived stress, and PTSD symptoms in a UK population of military partners. It also aimed to identify the extent of any relationships between these mental health outcomes and individual differences in previously implicated risk factors (including demographic characteristics and attachment styles) – as well as whether mental health outcomes vary by stage of deployment.

Method: A cross-sectional cohort study (n=380) was performed on a sample of UK military partners. A survey was developed and disseminated online which included a number of validated questionnaires measuring constructs of distress (Depression Anxiety Stress Scale-42), perceived stress (Perceived Stress Scale-10), traumatic stress (Post-Traumatic Stress Disorder Checklist-5) and attachment anxiety and avoidance (Experiences in Close Relationships-Revised). Measurement of defence mechanisms (DSQ-40) has been included within the extended paper for secondary analysis.

Results: The results indicate clinical levels of depression, anxiety, stress and perceived stress in military partners and significantly greater levels of distress when compared with prevalence rates in general adult and clinical populations. A number of demographic and deployment specific variables appear to be associated with elevated levels of distress including age, length of relationship, a currently deployed partner and anxious and avoidant attachment styles. Analysis comparing the different stages of deployment found significantly higher depression and stress scores ‘on’ deployment compared to ‘post’ deployment and significantly higher perceptions of stress ‘post and pre’ stage of deployment compared to ‘post’ deployment. Attachment avoidance was also statistically more likely ‘post’ deployment compared to ‘on’ deployment. There were no significant differences on defence mechanisms according to stage of

deployment. Findings are discussed in relation to previous evidence and future directions of clinical practice and research.

Conclusions: Findings indicate the need for more replicable research to provide evidence for the prevalence of mental health difficulties in a sample of UK military partners. Longitudinal and repeated measure designs would provide a more reliable understanding and clarity of mental health across the stages of deployment. Qualitative accounts might provide a rich and in-depth understanding of the factors mediating and moderating the elevated levels of distress found in this study of military partners. Qualitative enquiry might also provide opportunities to explore other processes underlying the varied levels of distress dependent on stage of deployment, found in this study, and the implications of these. Future research might need to consider how to reduce limitations associated with sampling and study design, though at present, the results provide preliminary support for more specialist and readily accessible mental health services for military partners.

Statement of Contribution

On completion of this project the majority of responsibility related to design, ethical approval, review of the literature, recruitment, the online survey tool, analysis and write-up has lay with the trainee clinical psychologist. The supervisors involved; Dr Rachel Sabin Farrell, Prof Nigel Hunt and Dr Nima Moghaddam gave advice and support regarding the project design, literature review, recruitment, analysis and write-up.

Summative feedback regarding the study design, ethical approval, literature review and analysis was also given by academic tutors on the Trent Doctorate in Clinical Psychology, namely; Dr David Dawson and Dr Roshan Das Nair through their examination and feedback of the original research proposal. Other ethical and practical considerations were also discussed during a research annual review involving Dr Hannah Meridian of the University of Lincoln. Regarding recruitment and the design of the online survey, the assistance of military personnel was invaluable in ensuring language was correct and pitch was appropriate.

A systematic review of the psychological impact faced by partners of military personnel who are deployed overseas.

ABSTRACT[†]

Aim: This review examined the impact of deployment on military personnel partners' psychological wellbeing.

Method: A systematic search of electronic databases, reference lists and Internet sources identified twelve studies for review. All of the studies assessed the impact of deployment on one or more element of psychological health of military partners. Only articles that were peer-reviewed, written in English language and adopting a quantitative design were included.

Results: Outcomes from the studies suggested increased levels of depression, anxiety, stress and distress in partners of currently deployed personnel. Results from the methodological quality, however, shows outcomes are not supported by robust research designs and analysis.

Conclusion: Overall, the results suggest psychological difficulties in partners of deployed personnel are pertinent, however, conclusions are severely limited to draw any sound conclusions. Recommendations for future research are made.

Keywords: Psychological, Mental Health, Impact, Deployment, Military, Partners

[†] This review has been prepared for submission to Military Medicine

INTRODUCTION

The psychological impact of deployment on military personnel and veterans is well documented in both UK and US literature[1 2 3] and the impact on children has also been identified[4 5 6]. However, the psychological impact on military partners[‡] is less known and are described as "*the overlooked casualties of war*"(p10)[6]. This lack of awareness is surprising given the number of people that are affected by deployment. Research that does exist has suggested the impact of deployment on psychological health of partners is the same, if not worse, than those actually deployed[7 8]. High rates of depression[11], anxiety, sleep disorders and stress[9] have been reported in military partners. However, the findings of this research are conflicting when phase of deployment is taken into account. Previous reports have suggested that the perceived impact on partners left at home, impact on the deployed personnel. It is therefore important to highlight this area, particularly for healthcare services likely to be presented with the unique lifestyle that partners experience.

The deployment cycle has been defined as pre-deployment, during deployment, and post-deployment[10]. Descriptions of the cycle have highlighted the different mechanisms at play for children during each phase, and so its application to military partners and their own experiences could be of relevance. Recent statistics have found that 91% of military partners sought help during deployment for psychological difficulties compared to 48% post deployment[11]. These enhanced difficulties during deployment have been explained from an attachment perspective as 'separation anxiety'[12]. The difficulties may also be interpreted from a psychodynamic perspective in relation to an inability to update defence mechanisms (termed by Freud[13]) at the time of departure of their partner. These findings highlight that psychological difficulties faced by partners of deployed personnel are at their most difficult during the deployment phase, and suggest that a review should focus on this phase.

A review on the impact of deployment to Iraq or Afghanistan on military partners was conducted in 2011[14], however, it did not undertake specific quality assessments of the literature, nor did they account for potential confounding variables (e.g. PTSD) in their exclusion criteria, which could lead to a misrepresentation of deployment impact. Furthermore, time (i.e. between 2001 and 2010) and gender restrictions (females only) were applied to the inclusion criteria and so limited the bigger picture. Finally, the review focused on impact across the whole deployment cycle, and was also limited to two deployment destinations. It was therefore considered appropriate to carry out a further comprehensive systematic review.

Objectives

The current review aimed to evaluate the evidence for the impact of active deployment on the psychological wellbeing of military partners of both genders, only at the deployed phase. It aimed to identify the relevant published research,

[‡]Partners will be used to refer to anyone who is in an intimate relationship with a military person

to evaluate and summarise the findings and quality of such research, and to inform future research in the field.

METHODS

Design

To assess the psychological impact of deployment on military partners, a systematic review of quantitative studies was conducted in accordance with the Centre for Reviews and Dissemination's Guidelines for Systematic Reviews[15] and the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA)[16].

Search methods

Databases

The databases searched were: PsychINFO, CINAHL, MEDLINE and EMBASE. Searches were not restricted by year due to the limited research available on the psychological impact of deployment on military partners. Studies from each database's first allowable search date through to July (week 2) 2015 were included.

Other resources

Internet search engines (Google and Google Scholar) were also searched for peer-reviewed publications. Reference lists from each included study were then reviewed for relevant articles.

Keywords

The keywords used were based on permutations of the four main constructs of the review question and incorporated the appropriate Boolean operators where required: military, partners, deployment and psychological impact (see TABLE 1).

TABLE 1: Keywords

Military	military
	"military personnel"
	army
	RAF or "royal air force" or "air force" or airforce or air-force
	navy
Spouse	spous*
	partner*
	wife or wives
	girlfriend*
	husband*
	boyfriend*
	couple*
	married
Deployment	oversea*
	deploy*
	detach*
	war
	conflict
	"out of area"
Psychological Impact	"psych* difficult*"
	"psych* effect*"
	"psych* problem*"
	"psych* issue*"
	"psych* impact"
	stress*
	"mental health"
	"mental health difficult*"
	"mental health problem*"
	"mental health issue*"
	"mental health effect*"
	"mental health impact"
	impact*
	coping
	"coping strateg*"
	"coping behavi*"
	trauma*
	"long term difficult*"
	"long term problem*"
	"long term issue*"
	"long term effect*"
	"short term difficult*"
	"short term problem*"
	"short term issue*"
	"short term effect*"

Review procedure

Eligibility criteria

The following inclusion and exclusion criteria were applied;

Eligible studies:

- Were peer-reviewed
- Published in English
- Studied male and/or female partners of military personnel
- Subject to any overseas deployment
- All or part of the study focused on the psychological difficulties faced by military partners
- Included (for all or part of the study) quantitative analysis.

Excluded studies were those which:

- The population studied is military personnel, as opposed to partners
- The outcomes related to being a prisoner of war partner or relationship/marital satisfaction only
- The focus was on the impact of children
- The "during deployment" stage was not focussed on
- Only report intervention outcomes
- Only adopted a qualitative approach

Data extraction

Information from eligible studies was extracted using a standardised form based on criteria adapted from the recommendations by CRD (2009) to include general information, study characteristics and a summary of results.

Methodological quality

A meta-analysis was considered by separating and pooling the types of impact (e.g. depression, anxiety), however, due to the limited evidence base, heterogeneity of psychological difficulties and the measures used to assess such difficulties, the likelihood of producing meaningful results would be unlikely and was thus deemed inappropriate. It was therefore important to assess the methodological quality at the outcome level to produce a narrative synthesis to determine the strength of the findings to allow for conclusions to be made.

A number of standardised assessment tools exist to evaluate the bias and validity of research[17]; however, the majority of these tools are designed to assess the quality of randomised controlled trials and are therefore inappropriate for this review.

Critics have argued that scales and checklists should not be used, and a more domain-based evaluation should be adopted. The use of scales has been argued as too simplistic, unreliable at assessing validity and un-supported by empirical

evidence[18 19]. The assignment of scores is argued to encourage reporting rather than conduct, is less transparent to the reader but also difficult to justify[20].

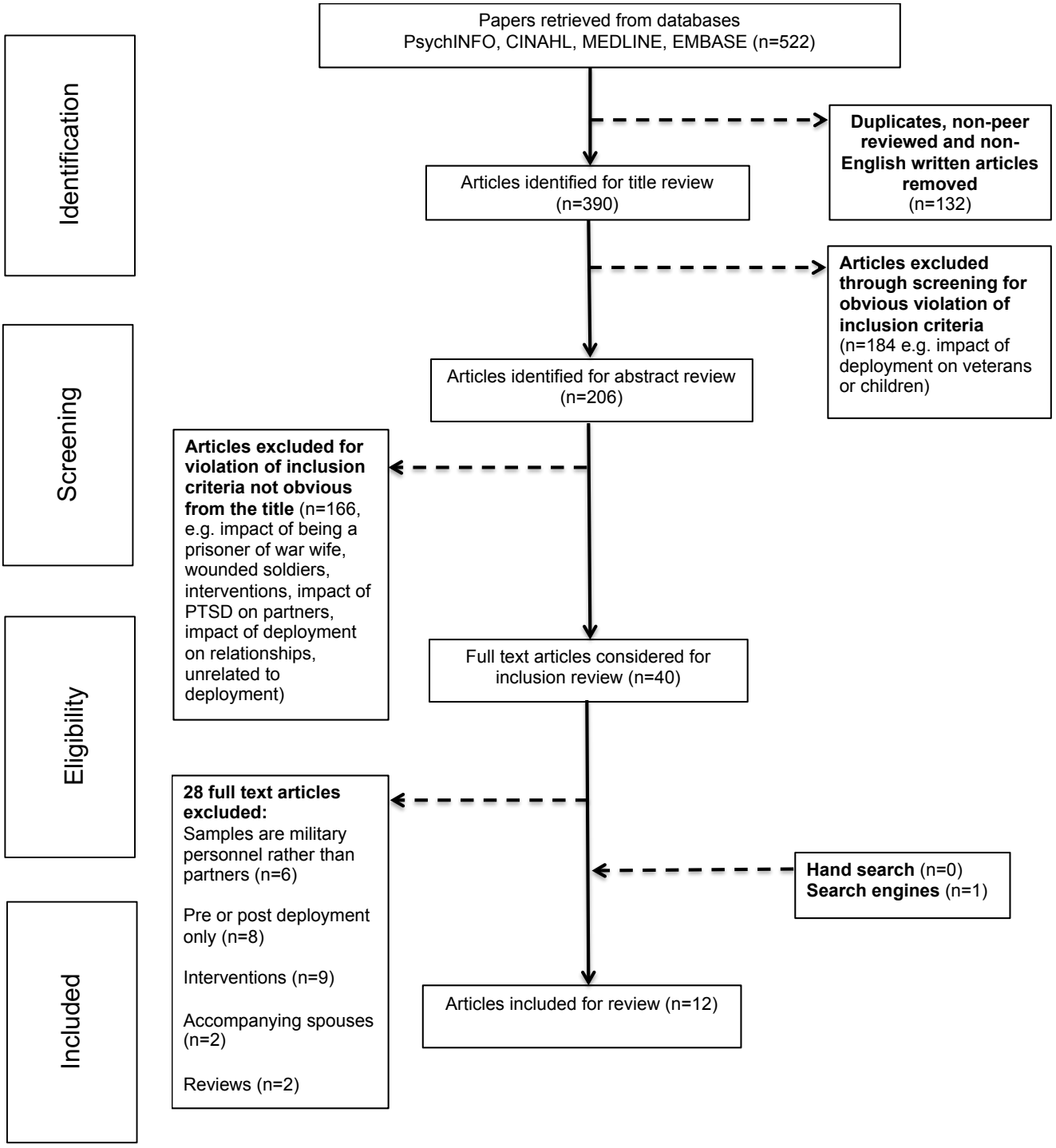
After considering the pragmatic and methodological issues of the included studies and because of the lack of consensus around what is the best tool to use, the principles from different recommended quality assessment tools were amalgamated to create a unique tool to determine the robustness of included studies to guide future research. The tool (See Appendix A) incorporated questions found on the Newcastle Ottawa Scale[20], the CASP[16] and adopted a multi-level scoring system recommended by Cochrane to determine "risk of bias"[20].

RESULTS

Study selection

The search of all databases returned 522 potential resources. After removing duplicate articles, 390 remained. After reviewing titles, 206 remained. Following review of abstracts, an initial 40 articles were full text reviewed in greater detail; 11 articles met the inclusion criteria. Reference lists of the included articles found no other relevant studies. Using the phrase 'psychological impact of deployment on military spouses' (based on common keywords from included articles so far) on Google scholar returned one further article for inclusion. Twelve studies therefore met the inclusion criteria (see flow diagram in FIGURE 1).

FIGURE 1. Included and excluded studies.



Study Characteristics

The review process identified 12 studies that examined the psychological impact of deployment on military personnel partners[8 2 12 22 23 24 25 26 27 28 29 30 31]. The study characteristics are summarised in Table 2, including sample size, population studies, and outcome measures. Table 3 offers a summary of the outcomes of each study.

TABLE 2. Included Studies

Primary author Publication date	Sample				Methodology Design	Service arm	Deployment status	Deployed to…	Psychological difficulty measured	Outcome measures	Population
	N	Reported title	Sex (M/F)	Mean age							
Andres, 2012	T1-453	partners	M 12 F 441	32.9	Quantitive Repeated Measured	Army Navy AF Police	1 month Prior	Afghanistan Bosnia-Herzegovina	Psychological distress Life Stress Loneliness	GHQ-12 LSS UCLA Loneliness Scale	Netherlands
	T2-386	partners	M 11 F 372	33.2			Midway Deployment				
	T3-235	partners	M 5 F 230	33.9			3 Months Post				
Asbury, 2012	59 vs 62	spouses of military vs spouses of cvilian	Military M 29% F 71% Civilian M 35% F 65%	Military 30.75 Civilian 25.94	Quantitive Case Control Study	Army Navy AF Police	Deployed vs civilian counterpart	NR	Depression Anxiety	DASS	USA
Beckman, 1979	24	wives	F	26.3	Quantative Within Subjects	Navy	Deployed vs Non-Deployed	At Sea	Depression	ZDS MAACL	USA
Burton, 2009	130 (62 deployed vs 68 non-deployed)	spouses	F	27.8	Quantative Between Subjects	NR	Deployed vs Non-Deployed	Iraq Afghanistan	Perceived stress Somatization	PSS-10 PHQ-15	USA
Eaton, 2008	940	spouses	NR	NR	Quantative Cross Sectional	Army	737 Deployed 203 Unknown	Iraq Afghanistan	Major depressive disorder Generalised anxiety disorder	PHQ	USA
Everson, 2014	192	spouses	F	NR	Quantitative Cross Sectional	Army	Deployed (3, 6, 9 months) vs Non-Deployed	Iraq	Physiological and psychological strain & stress	OSI	USA
Faulk, 2011	367	spouses	F	27	Quantitative Cross Sectional	Army	Deployed	Iraq Afghanistan	Stress Depressive Symptoms	PSS-10 PANAS CES-D	USA
Mansfield, 2010	250,626	wives	F	NR	Analysis of existing records	Army	Deployed vs Non-Deployed	Iraq Afghanistan	Diagnosis	Pre-existing records	USA
Rosen, 1994	1107	wives	M 9 F 1098	NR	Cross-sectional	Army	Deployed	Middle East Persian Gulf (ODS)	Emotional well being	HSCL	USA
Rosen, 1995	587	wives	F	28.7	Quantitative Within Subjects	Army	Deployed vs Post-Deployed	Middle East Persian Gulf (ODS)	Distress Depression Anxiety	DDS HSCL	USA
Skomorovsky, 2014	639 Spouses (255 deployed 384 post deployed)	spouses	M 8.9% F 91.1%	NR	Cross-sectional	CAF (AF, Army, and Navy)	Deployed Post-Deployed	NR	Psychological Health Depressive Symptoms Stress	GHQ-12 CES-D FIS	Canada
Wexler, 1991	180	94% wives (6% unknown)	F	27	Cross-sectional	NR	Deployed	Middle East; Persian Gulf (ODS)	Health (inc sleep) Anxiety Loneliness Other negative feelings	FSRI	USA

NR-Not Reported. T-time. Measures: GHQ-General Health Questionnaire; LSS-Life Stress Scale; UCLA-Loneliness; DASS-Depression and Anxiety Stress Scale; ZDS-Zung Depression Scale; MAACL-Multiple Affect Adjective Checklist; PSS-Perceived Stress Scale; PHQ-Patient Health Questionnaire; OSI-Occupational Stress Inventory; PANAS-Positive and Negative Affect Schedule; CES-D-Centre for Epidemiological Studies Depression Scale; HSCL-Hopkins Symptom Checklist; FIS-Family Issues Scale; FSRI-Family Stress Reaction Inventory; DDS-Deployment Distress Scale.

TABLE 3. Summary of results and limitations

Primary Author Publication Date	Summary of results
Andres, 2012	Mean scores for psychological distress, life stress and social isolation were highest midway through deployment
Asbury, 2012	No significant difference between spouses of deployed military personnel and spouses of civilians on depression or anxiety.
Beckman, 1979	First three month cycle, the wives whose husbands were absent had higher scores on both measures (indicative of higher levels of depression). When the conditions reversed during second three month cycle, the wives whose husbands were then present had lower scores while those in husband-absent condition scores increased.
Burton, 2009	Spouses of deployed personnel had significantly higher PSS-10 and PHQ-15 scores (indicative of stress and somatization) than spouses of non-deployed personnel.
Eaton, 2008	19.5% of spouses met screening criteria for either major depressive disorder of generalised anxiety disorder; 12.2% positive for depression and 17.4% positive for anxiety. 33% used alcohol more than they had intended and >20% reported that stress and emotional problems were having a significant impact on their lives.
Everson, 2014	53% of peronnel stress accounted for by number of deployments and rank of deployed personnel. Increased strain when first deployment. Levels of stress were maintained throughout deployment.
Faulk, 2011	Stress positively correlated with depressive symptoms and negatively correlated with positivity. 23% report clinical depression and 39% moderately severe levels of depressive symptoms.
Mansfield, 2010	Of those wives of deployed personnel, 36.6% had at least one mental health diagnosis compared to 30.5% of non-deployed personnel. Depression, anxiety, sleep disorder, and acute stress reaction and adjustment disorder were most common diagnosis, however, the percentage of wives with non-deployed personnel with one or more diagnosis was lower.
Rosen, 1994	The second-youngest and second-oldest cluster of spouses (one and four) had low support, high stress and poor coping. The "best copers" had a higher proportion of officer spouses. Clusters one and four had higher proportion of hispanic spouses and employed spouses.
Rosen, 1995	Spouses had higher scores of anxiety and depression during deployment than when they reported at post-deployment. 70% of spouses symptomatic during deployment which reduced to 34% post-deployment.
Skomorovsky, 2014	Deployment stress significantly higher among spouses of currently deployed personnel in comparison to those whose partners had recently returned. Deployment stress significantly predicted increased depressive symptoms and psychological health
Wexler, 1991	The most distressing emotional reactions were anxiety (56%), loneliness (78%), sadness (65%) and worry (74%). Highest physical reactions included headaches (43%), eating too little (44%), insomnia 48%), nervousness (47%) and distractibility (42%). 25-30 year olds reported highest rates of worry and insomnia (91% and 66% respectively). Caucasion ethnic group had more physical and psychological symptoms than ethnic minority groups. Those with a total number of 12 months or more separations had highest anxiety and insomnia (77%).

Key Findings

Depression

Asbury et al[23] found no significant difference between partners of deployed military personnel and partners of a civilian population and scores for depression were found to be low in both groups. Furthermore, although not directly reported in text, Skomorovsky[31] found a mean score of 2.5 on the CED-10 i.e. not suggestive of depression.

Faulk[27] found that 39% of the sample reported a moderately severe level of depressive symptoms as measured by the CED-10; however, wives who had experienced more deployments had lower levels of depression. A further two studies found partners screened positive on the PHQ and were more symptomatic of depressive symptoms (measured by the HSCL) during deployment compared to post deployment[8 30] and in one study, rates were paralleled to returning combat soldiers[8].

Mansfield[28] investigated medical records and found that partners of deployed personnel received more diagnoses of depressive disorder than those whose partners weren't deployed. This increased, however, when length of deployment exceeded 11 months. This was similar to the results when comparing the same group at deployment and post deployment stages for depression; Beckman et al[24] found clinical levels of depression in wives, measured by the ZDS and MAACL, which significantly reduced at the post-deployment stage.

In summary, two studies found no evidence of depression and four studies found clinical levels of depression. Two of the four studies, however, reported less than 50% showed signs of depression. The results also suggest that as deployment length increases, depressive symptoms become worse, however, if partners experienced more deployments the risk of depression lowers.

Stress

Andres[22] found that mean scores for stress were highest mid-way through deployment compared to one month prior and three months post deployment. Burton[25] also found partners of deployed personnel had significantly higher perceived stress scores than partners of non-deployed personnel. Similarly, Mansfield[28] and Skomorovsky[31] found significantly higher rates of acute stress disorders and deployment stress amongst partners of deployed personnel compared to partners of non-deployed personnel. It was found that increased perceived stress scores were positively correlated with clinical levels of depression[27]. Rosen[29] found higher levels of stress in younger participants (under 30).

All studies investigating stress were consistent in finding significantly higher levels during deployment.

Anxiety

Asbury[23] found no significant difference between partners of deployed military personnel and partners of civilians. Although no difference was observed between the two groups, mean scores for the deployed group were still suggestive of moderate anxiety (M=22.24 on the DASS).

Eaton[8] found that 17.4% of partners screened positive for generalised anxiety disorder during deployment. When comparing the same group during deployment and then post deployment, participants were more symptomatic of anxiety during deployment, which improved at post deployment[30] (mean scores reducing from 2.0 to 1.56 on the HSCL).

Two studies reported very similar findings in relation to increased separation and anxiety[28 32]. In Wexler's[32] sample, 56% reported feelings of anxiety in response to deployment and Mansfield[28] found more partners of deployed personnel received diagnoses of anxiety related disorders. Both found that as deployment length increased, anxiety also increased (e.g. 22% just deployed compared to 77% at 12 months).

The evidence is therefore suggestive of increased anxiety during deployment.

Psychological Distress

Four studies[26 29 31 32] did not conceptualise "psychological difficulties" but have reported on domains such as psychological distress, strain, health and/or wellbeing.

In Skomorovsky's sample, problems with psychological health were found during deployment although which areas, as measured by the GHQ-12, were not reported. Andres' mean scores for 'psychological distress' (worry, strain, unhappiness or distress) were highest mid-way through deployment when compared to pre and post deployment. Similarly, Wexler found feelings of sadness (65%) anger (37%) and worry (74%) in partners during deployment.

The remaining studies controlled for different demographics to determine differences in psychological distress: Two studies indicate younger samples are at increased risk of low levels of psychological wellbeing[29] (not reported in text, but tables indicative of this result) and significant worry and concerns impacting their life (91%)[32]. Furthermore, in one study, partners of lower ranking personnel experienced greater levels of personnel distress including irritability, worry, depression and anxiety[26]. These were, however, not distinguished between in the reporting of results.

As psychological distress has not been conceptualised or separated out according to sub-scales, it is difficult to decipher results.

Health/Physiology

Burton[25] defined somatization as "bodily symptoms for which no organic causes are found". It was found that somatization scores on the PHQ in partners of deployed personnel were significantly higher (M=14.48) than those in non-deployed partners (M=4.01; indicative of minimal somatization).

Wexler[32] found that the most distressing physical symptom reported by partners of deployed personnel was insomnia (48%). Sleep related disorders among partners of deployed personnel were also prevalent in Mansfield's sample[28].

Wexler[32] went on to identify a significant amount of partners that reported headaches (43%), Eating too little (44%) and distractibility (42%). Other symptoms reported (albeit to a lesser degree) included stomach-aches (28%), sleeping too much (11%), lack of concentration (38%), rashes/skin problems (11%), nightmares (18%) and more colds than usual (7%).

Everson[26] collected data relating to sleep, fatigue, physical ache and pains and weight gain/loss, however, these were not reported in text and were not separated from the psychological difficulties also investigated using the same scale (OSI).

Evidence is therefore somewhat indicative of the negative impact of deployment on the psychological physiology of partners during deployment.

Synthesis of Quality / Risk of Bias

The methodological quality across the selected studies varied. The results can be found in TABLE 4. A visual summary of the quality can also be seen in TABLE 5.

Design

Power analyses have been highlighted as an integral part of any research plan. A power analysis provides the number of participants required to minimise chance findings of effect sizes (i.e. p values). All but one of the included studies reported on effect sizes, therefore, the generalizability of the results found in the themes previously outlined is poor.

The use of a control group increases confidence in that the observed effects are specific to the target population. Seven of the studies reviewed had no comparison group[8 22 24 27 28 30 32]. One study[23] compared partners of military personnel who were deployed to partners of non-military civilian members of the public. This design is limited given that observed differences may not be the product of the deployment, but of the unique military lifestyle instead. Four of the studies reported a control group of non-deployed partners[25 26 29 31]. Results of the studies that contrast to a non-deployed control group have greater specificity and are arguably more reliable.

Based on the designs of the included studies, the confidence in the conclusions provided is low.

Participants

Demographics

Demographic data is important given the heterogeneous nature of the population in focus. The demographic data could impact on the results but may also account for any differences found between groups. Demographics that are likely to be important include gender, age and socio-economic status because of the differences in experiencing psychological difficulties. More specifically to the military lifestyle, demographics such as Armed Forces branch are important. For example, those serving in the Navy on submarines are less likely to have communications with their partner but also tend to be deployed on a three-monthly cycle. This is in comparison to Army personnel who are more likely to be deployed to combat zones and for longer periods of time. This also highlights the importance of knowing the deployment length, deployment location but also the rank of which the military personnel is. All of these are likely to impact on outcomes if not controlled for or at least, acknowledged and if not, would make temporal or casual associations difficult to make.

None of the studies reported all the demographics highlighted above. Five studies did not report the actual mean age of their sample[8 26 28 29 31]. All but one[8] reported

gender. Two studies reported on socioeconomic status[24 32]. The remaining studies varied in terms of other information gathered and included length of marriage, number of children, rank of partner, previous deployments. Five studies did not include demographic data in statistical analysis[8 22 24 28 32].

Of the four who had a more reliable control group (non-deployed partners)[25 26 29 31] only one reported whether their samples were matched[25]. Data included education, children, ethnicity, rank and whether experienced previous deployments. Rosen[29] reported demographic data for each of their clusters, however there was no reference of this in text. Two studies[26 31] grouped their sample and so did not distinguish between mean age, length of marital relationship or number of children. Everson[26] did, however, gather data regarding rank and ethnicity and used these in their analysis. Asbury[23] only reported that their samples differed in age.

Risk of bias is therefore high with regards to demographic data and there appears to be an inability to draw conclusions on how the impact of deployment may vary according to demographic data.

Representative

Only four studies included male partners in their sample[22 23 29 31]; of the total participants (255,987), 139 were males. Studies are therefore not representative of the male military partner population. All studies included married personnel and therefore further limits its applicability to civil partnerships and co-habiting partners. Furthermore, participant's age range was generally late twenties to early thirties.

The lack of representation from minority backgrounds was evident. Three studies reported ethnicity[25 29 32] and of those there was a huge discrepancy between Black and Hispanic participant numbers compared to Caucasian participants and only one incorporated ethnicity in their analysis[32].

Another problem that arises from this type of research is the applicability to other Armed Force branches. Included studies comprised samples from the ARMY, NAVY, AF and Police, with the most common being the army[8 22 23 26 27 28 29 30 31]. Only three studies included more than one branch i.e. ARMY, NAVY and AF[22 23 31] and two studies[25 32] did not report this information. Outcomes are therefore not representative of the Armed Forces as a whole, but only of the branch of investigation.

Ten of the studies adopted partners of the American Armed Forces as their samples[8 23 24 25 26 27 28 29 30 32], one sampled the Canadian Armed Forces[31] (Skomorovsky) and the final was Netherlands Armed Forces[22]. The studies are therefore not representative of Armed Forces internationally. It is likely different countries' Armed Force's come with their own unique stressors. For example, US Armed Force partners may have increased concerns over healthcare and money, in comparison to UK Armed Force. Plus, the length of deployment is varied according to country i.e. UK AF maximum of four months compared to US AF of minimum 6 months.

The application of these studies to the wider Armed Forces is therefore limited and while inferences can be made, no sound evidence can be referred to.

Inclusion and exclusion criteria

Only one study reported on the inclusion and exclusion criteria of their sample[25]. The remaining studies did not provide an outline of their criteria for purposes of participant selection. One study[29] excluded males from their sample due to a low uptake, however this was only after recruitment. While it is possible that studies did not want to limit their sample, there was no recognition of the importance certain criteria may have (i.e. partners at the beginning of deployment compared to the end of deployment).

Confounding variables

None of the included studies reported on previous mental health/psychological difficulties. The risk of bias is therefore high given that psychological difficulties could have been present prior to deployment but it has not been controlled for in analyses.

Outcome measures

All but one study[28] used brief screening tools rather than validated clinical measures to estimate the prevalence of mental health difficulties.

Depression was measured using a variety of psychometrics, which included the DASS, ZDS, MAACL, PHQ, CES-D and the DDS. The CES-D was used in two different studies[27 31]. None of the above scales have been validated on a military partner sample. Skomorovsky[31] used the CES-D and reported a scale of one to four, however, official guidelines suggest a scale of one to three. This could have been a reporting error; however, it creates ambiguity around findings.

The CES-D has been validated in other samples such as the general population, physical and mental health[33 34 35]. One particular concern is the sensitivity of some items on the CES-D in relation to gender. It has been found that even if levels of depression are the same amongst men and women, as experiences of depression increase, women are more likely to report higher scores on certain items[36]. Differential item functioning therefore becomes a problem, specifically; Faulk[27] and Skomorovsky's[31] findings of increased depression are questionable due to their all-female samples.

Anxiety was measured using the DASS, PHQ, HSCL or the purpose developed LSS. The author[22], who created the LSS to assess emotional wellbeing including anxiety, did not appear to carry out a pilot study as no confirmatory factor analysis, composition of scales, differential item functioning or validity scores were reported; therefore, confidence in the use of such a scale is none. None of the instruments have been validated specifically on this population, however, the HSCL anxiety subscale has found to have high concurrent validity and cultural

sensitivity[37] and the DASS and PHQ have relatively good psychometric properties in their application to the clinical population[38 39].

Cut off scores were not reported in many of the studies. Two studies reported the cut off scores normally adopted for the given psychometric, however, the scores for the sample were then, not reported[26 32]. Furthermore, the majority of the sub-scales were not separated (i.e. anxiety and depression on the DASS) and so does not give a detailed enough picture of the symptoms related to each subjective diagnosis.

The tools used in the selected studies appear to be relatively standardised in terms of administration. However, psychometric scales are problematic due to the subjective constructs being measured (e.g. depression) and the lack of underlying theoretical applications (i.e. DSM diagnosis) suggests problems around the construct validity in relation to results, particularly in this population.

The fact that confounding variables have not been controlled for in any of the studies, adds to the limitations of the outcome measures and serves to further decrease confidence in the findings.

Statistics

All studies reported to have carried out statistical analysis on the outcome measures in relation to deployment; however, they only required basic descriptive data (as no treatment effect is being observed) or basic comparisons of means. Reporting of statistical procedures was therefore low. Few studies went on to carry out further analyses in relation to number of deployments[27] length of deployment[28 32], age[29 32] and rank[26] on difficulties, however, multiple analyses are likely to increase the risk of type I errors (findings by chance), which for the included studies is particularly relevant. No correctional analyses supplemented their findings (i.e. Bonferroni statistics) to minimise this risk.

Furthermore, one study[25] carried out overall mean statistics of the two groups, but did not carry out further analysis to compare the significance of the difference (e.g. an independent sample T-Test). This presents a missed opportunity to determine differences between the two groups.

TABLE 4. Results of methodological quality.

Study	Design		Participants								Outcomes		Statistics		Reporting
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Andres, 2012	+	+	++	NA	+	+	+	+	++	+++	+++	++	+++	+++	+++
Asbury, 2012	+	++	+++	++	++	+	+	+	NA	NA	+++	++	++	+	+++
Beckman, 1979	+	+++	+++	NA	+	+	+	+	NA	NA	+++	++	+++	+	+++
Burton, 2009	+++	+++	+++	+++	++	+++	+	+	NA	NA	+++	++	+++	+++	+++
Eaton, 2008	+	+	++	NA	++	+	++	+	NA	NA	+++	++	+	+	+++
Everson, 2014	+	+++	+++	++	++	+	+	+	NA	NA	++	++	+++	+++	+++
Faulk, 2011	+	+	+++	NA	+++	+	+	+	NA	NA	+++	++	+++	+++	+++
Mansfield, 2010	+	+++	++	NA	++	+	NA	++	NA	NA	NA	+	++	+	++
Rosen, 1994	+	+	+++	+	++	+	+	+	NA	NA	NA	+	+	+	+++
Rosen, 1995	+	+	++	NA	+	+	+	+	+	+	+++	+++	++	+	++
Skomorovsky, 2014	+	+++	++	+	++	+	+	+	NA	NA	+++	++	+	++	+++
Wexler, 1991	+	+	++	NA	+	+	+	+	NA	NA	++	+	+	+	+

+	Low quality/high risk of bias
++	Moderate quality/moderate risk of bias
+++	High quality/low risk of bias

TABLE 5. Summary / synthesis of quality assessment

Criteria	Overall quality of evidence
1. Power calculation	
2. Control group	
3. Demographics	
4. Matched controls	
5. Representative sample	
6. Inclusion and exclusion	
7. Take-up rate	
8. Confounding variables	
9. Attrition rate	
10. Attrition comparison	
11. Outcome measures	
12. Standardized measures	
13. Statistical analysis	
14. Effect size	
15. Reporting bias	
	5 0%

CONCLUSION

This review examined the impact of deployment on partners of military personnel. Depression and anxiety were found to be prevalent in samples of military partners; however, a clear finding of the review is that the literature on the psychological impact of deployment on military partners lacks the rigour to draw sound conclusions. Methodological issues from participant selection to statistical analysis have increased the risk of bias in results. In light of this, it is also important to be mindful that because no effect has been found in some studies, it does not mean one does not exist.

Given the psychological theory behind separation, it is fair to assume that psychological difficulties are prevalent in partners of deployed personnel. Factors such as length of deployment, number of deployments and rank of deployed partner may also impact on such difficulties. The need for more research is therefore evident; particularly with a UK sample that incorporates the main principles of conducting sound research i.e. a control group and thorough demographic data.

LIMITATIONS

There are a number of limitations to this review. Firstly, the pool with which article were drawn from included only English language and were limited to peer reviewed, published articles. It is therefore possible that the results have been biased and further research has been conducted to represent a wider population. Secondly, the search strategy developed was based on the authors' awareness of common terminology in the area of focus. This presents a small bias to the review. Finally, systematic reviews are generally conducted by a small group of independent researchers to increase reliability of included studies and eliminate disagreements. This was not possible for this review and therefore may be subject to author bias.

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Appendix A: Quality Assessment Tool

Design	1	Did the study have adequate power to demonstrate effect?	+++ Power calculations were reported and; ++ Power calculations were reported but not sufficient; +No power calculations reported.
	2	Was there a control group?	+++ There was a control group allowing for reasonable conclusions to be made (e.g. Non-deployed military spouses); ++ There was a control group allowing only general conclusions (e.g. non-military spouses); +No control group.
Participants	3	Are participant demographics reported?	+++Demographics are clearly reported; ++Demographics are partially reported; +Demographics are not reported.
	4	If relevant, were groups matched demographically?	+++Demographic variables matched; ++Demographics partially matched; +Demographics differed in ways not statistically accounted for or there was no data.
	5	Is the sample representative of military partners?	+++Sample represents a range of military partners-appropriate gender split, varied age range and recruited from varied settings; ++Sample represents limited range in terms of gender, age and recruitment; +Sample has poor representation.
	6	Are inclusion and exclusion criteria adequately reported?	+++Inclusion and exclusion criteria clearly reported; ++Inclusion and exclusion criteria are partially reported; +Inclusion and exclusion criteria not reported.
	7	Did the study indicate rates of eligible participants refusing to take part? (Including reasons)	+++Take-up rate >75%; ++Take-up rate between 50 and 75%; +Take-up rate of <50% or not reported.
	8	Have confounding variables been reported and accounted for in the design and analysis? (I.e. pre-existing psychological difficulties).	+++Potential confounds reported and accounted for in the design and analysis; ++Potential confounds reported and corrected for in analysis; +Potential confounds only discussed or not reported.

	9	Is the follow-up of participants complete? Are attrition rates reported?	+++Low attrition; ++Medium attrition; +High attrition or not reported.
	10	Were comparisons made between those lost to follow up and those who participated fully?	+++Reported and comparisons made on drop-outs; ++Reported drop outs, but no comparisons made; +No details on those lost to follow-up.
Outcomes	11	Were the outcome measures operationalized and matched at all collection points?	+++Outcome measures clear and objective (e.g. depression) and were consistent at all data collection points; ++Outcome measures were described but were subjective (e.g. ratings/range of perceived stress); +Outcome measures subject to bias (e.g. ratings of wellbeing) and/or differed across data collection points.
	12	Were the measures used standardised?	+++Outcome measures were standardised for this population; +Outcome measures were standardised for a general population; +Outcome measures not standardised.
Statistics	13	Were appropriate statistical analyses conducted and reported?	+++Appropriate statistical analyses conducted and reported; ++Statistical analyses reported for only some measures; +No statistical analysis, only descriptive data reported.
	14	Were effect sizes adequately reported?	+++Effect sizes reported clearly; ++Effects sizes partially recorded; +No report of effect sizes.
Reporting	15	Is all data collected, reported in the results of the study?	+++All data is reported on in the results; ++Data collected, not reported but missing data explained; +Data collected but not reported.

The Mental Health of UK Military Partners and the Variability between Stage of Deployment[3]

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*Author Note: Further aims and analysis have been completed as part of this project though these are only included in the Extended Paper written as an adjunct to the journal paper here.

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Journal Paper Abstract

Objectives: The purpose of this study was to identify the prevalence of anxiety, depression, stress, perceived stress, and PTSD symptoms in a UK population of military partners. It also aimed to identify the extent of any relationships between these mental health outcomes and individual differences in previously implicated risk factors (including demographic characteristics and attachment styles) – and whether mental health outcomes vary by stage of deployment.

Method: A cross-sectional cohort study (n=380) was performed on a sample of UK military partners. A survey was developed and disseminated online which included a number of validated questionnaires measuring constructs of distress (Depression Anxiety Stress Scale-42), perceived stress (Perceived Stress Scale-10), traumatic stress (Post-Traumatic Stress Disorder Checklist-5) and attachment anxiety and avoidance (Experiences in Close Relationships-Revised).

Results: The results indicate clinical levels of depression, anxiety, stress and perceived stress in military partners and significantly greater levels of distress when compared with prevalence rates in general adult and clinical populations. A number of demographic and deployment specific variables appear to be associated with elevated levels of distress including age, length of relationship, a currently deployed partner and anxious and avoidant attachment styles. Analysis comparing the different stages of deployment found significantly higher depression and stress scores 'on' deployment compared to 'post' deployment and significantly higher perceptions of stress 'post and pre' stage of deployment compared to 'post' deployment. Findings are discussed in relation to previous evidence and future directions of clinical practice and research.

Conclusions: Findings indicate the need for more replicable research to provide evidence for the prevalence of mental health difficulties in a sample of UK military partners. Longitudinal and repeated measure designs would provide a more reliable understanding and clarity of mental health across the stages of deployment. Qualitative accounts might provide a rich and in-depth understanding of the factors mediating and moderating the elevated levels of distress found in this study of military partners. Qualitative enquiry might also provide opportunities to explore other processes underlying the varied levels of distress dependent on stage of deployment, found in this study, and the implications of these. Future research might need to consider how to reduce limitations associated with sampling and study design, though at present, the results provide preliminary support for more specialist and readily accessible mental health services for military partners.

Keywords: military, armed forces, partners, deployment, mental health, UK

1. Introduction

The military has been described as an institution with its own culture of unique living conditions and lifestyles (Hatch et al., 2013). Such lifestyle differences, and possible major stressors (World Health Organisation; WHO, 2012), include regular re-location of base and home (possibly leading to family separation, partner separation and increased likelihood of social isolation), detachments, deployments, extended separations (which may lead to increased worry and feelings of loneliness), increased adaptation to danger and risk of injury or death (Padden & Agazio, 2013) as well as a life of uncertainty (Eubanks, 2013). These living conditions are likely to impact not only serving military personnel but their partners too. Age, gender, marital status and rank of partner may impact on how a military lifestyle is experienced (Hatch et al., 2013). Additionally, those with children experience an increased responsibility to meet their physical and emotional needs (Hatch et al., 2013). Though there has been limited formal research to assess these, the unpredictability and irregularity of the military lifestyle might increase the risk of developing mental health difficulties. This might be the result of lifestyle factors specific to the military including; living arrangements (living together or apart and distance from base) which may impact on the level of perceived and actual formal and informal support available (Burrell, Adams, Durand, & Castro, 2006) both when the partner is deployed and at home. It may also be that living and making friends with non-military individuals might increase military partners' feelings of being misunderstood and lonely (Burrell et al., 2006). These feelings may in turn may increase vulnerability to developing mental health difficulties, particularly if their partner is not proximally close.

The psychological impact of deployment on military personnel and veterans is well documented in both UK and US literature (Kessler, Sonnega, Bromet, Hughes, & Nelson, 1995; Macmanus et al., 2014; Samele, 2013) and the impact on children has also been identified (Bateman, 2009; Creech, Hardley, & Borsari, 2014; Lester et al., 2012; White, Burgh, Fear, & Iversen, 2011). The psychological impact on military partners is less known. They have been described as "*the overlooked casualties of war*" (Mansfield et al., 2010). This lack of awareness is surprising given the number of people that are affected by deployment. Research that does exist comes from the United States but is generally restricted to wives of military husbands; there is currently no UK research. None-the-less, the research has suggested the impact of deployment on psychological health of partners is the same, if not worse, than on those actually deployed (Blank, Adams, Kittelson, Connors, & Padden, 2012); . High rates of depression (Eaton et al., 2008; Ministry of Defence, 2014), anxiety (Hoge et al., 2004), sleep disorders, stress (Mansfield et al., 2010) and stress-induced somatization (Burton, Farley, & Rhea, 2009) have been reported in US samples of military partners.

The strength of evidence comparing military partners' levels of distress according to stage of deployment varies, with markedly more evidence exploring the mental health of military partners during the deployment stage compared to pre- and post-stages of deployment. The outcomes of this literature show differential levels of distress; it is apparent that all stages point to negative consequences though other potential positive sequela of deployment have so far had limited attention.

1.1 Pre-Deployment

Relative to other stages of deployment, there is little research exploring the impact of pre-deployment on the mental health of military partners (Erbes, Meis, Polusny, & Arbisi, 2012) though elevated stress levels in comparison to the general population have been found (Warner, Appenzeller, Warner, & Grieger, 2009) and significantly elevated levels of depression when compared to their soldier counter-part (Erbes et al., 2012). Spouses have reported their partners as "*physically present while psychologically absent*" (Wiens & Boss, 2006) in the pre-deployment stage due to pre-occupation with the upcoming deployment. The experience of pre-deployment for military partners has been characterised by anger due to feelings of abandonment (Pincus, House, Christenson, & Adler, 2001) and confusion, shock, disbelief and worry about challenges of adopting sole responsibility of the household (Esposito-Smythers et al., 2011).

1.2 During-Deployment

Evidence suggests military partners experience emotional disorganisation and destabilisation from a sense of disorientation, loss, grief, loneliness and abandonment during this stage of deployment (Esposito-Smythers et al., 2011; Pincus et al., 2001) when coupled with fear for their partner, are described as significant contributors to the development and maintenance of physical and mental health problems (Esposito-Smythers et al., 2011; Verdeli et al., 2011). Increased feelings of pressure and responsibility seem common (Esposito-Smythers et al., 2011; Pincus et al., 2001) and other stressors are reported such as lack of sleep, security worries (Pincus et al., 2001) and role reversals, all of which are likely to further the negative impact on mental health (Esposito-Smythers et al., 2011).

1.2.1 During-Deployment Comparisons

Perceived stress and somatic concerns have been found to be higher among spouses of deployed versus non-deployed personnel (Burton et al., 2009) and mean scores for psychological distress (including anxiety and depression), life stress, social isolation and depressive diagnoses were found to be highest while partners were on deployment compared to pre and post deployment (Andres, Moelker, & Soeters, 2012; Beckman, Marsella, & Finney, 1979; Mansfield et al., 2010; Warner et al., 2009). Though it might be a reflection of the limited research exploring other stages of deployment, the available evidence suggests military partners face more problematic psychological distress whilst their partner is deployed, though it is important to highlight that this evidence rarely gathered prospective data during the pre-and during deployment stages but retrospectively from the post-deployment stage.

1.3 Post-Deployment

The lead up to the post-deployment phase is said to be characterised by feelings of apprehension in the partner (Verdeli et al., 2011) and the return of the deployed person sees challenges such as reintegration and re-adjustment to family roles and routine (Lincoln, Swift, & Shorteno-Fraser, 2008). It is therefore suggested that the feelings of "*loneliness and isolation*" may continue throughout this period (Verdeli et al., 2011). Re-experiencing trauma symptoms have also been present in female partners of soldiers at post-deployment, however, this is explained in terms of a reminder of their own traumas rather than vicariously

from their partners' deployment (Hamilton, Nelson Goff, Crow, & Reisbig, 2009). Esposito-Smythers et al., (2011) believes that this phase may be characterised by mixed emotions, initial excitement but worry over how they will feel when re-connecting; this is when re-negotiation of roles and responsibilities occurs potentially increasing difficulties. A recent study recommended that the military spouse is no longer secondary but crucial to the health of serving military personnel (Lewis, Lamson, & Leseuer, 2012) and important for reintegration into civilian life (Verdeli et al., 2011). Although lower levels of psychological distress have been reported at post deployment stages in US literature (Beckman et al., 1979; Eaton et al., 2008), Renshaw, Rodrigues, & Jones, (2008) found partners of veterans continued to report significant distress at this time. A report published in 2010 (O'Toole, Catts, Outram, Pierse, & Cockburn, 2009) showed that three decades after the Vietnam war, partners were still experiencing significant depression and anxiety in relation to their military partner's deployment.

Deployments are not single events and military partners are likely to face such stages a number of times; military partners may also be constantly situated in more than one of these stages at any one time (e.g. post- and pre-deployment/separation). There is limited understanding of cycles of deployment due to limited longitudinal studies exploring the influence of variations in lengths between and during each stage, as well as the instances when some stages are never reached (e.g. through relationship breakdown or death); though the deployment cycles presented, do appear consistent with empirical studies exploring the mental health of partners who experience deployments of 6 months or greater.

In addition to potential temporal/stage based variability in mental health outcomes (varying according to partner's stage of deployment) previous literature has identified several (demographic and military related) factors that may modulate mental health outcomes in military partners.

1.4 Risk factors

Previous research has suggested factors that are likely to increase the risk of distress and negative mental health outcomes (i.e. anxiety, depression and stress), which include; being aged between 25 and 30 years old, experiencing a higher number of months separated due to deployment (Wexler & McGrath, 1991), increased number of deployments (Everson, Herzog, Figley, & Whitworth, 2014), extended deployments (Eaton et al., 2008; Wexler & McGrath, 1991), and spouses of lower ranking personnel (Everson et al., 2014). Based on the research cited earlier, it could be hypothesised that, military partners with children, those living with their partner full-time, and the increased perceptions of danger may exacerbate the level of mental health problems in those left behind; although these have yet to be formally researched. Conversely and in line with the above, risk appears to be reduced in partners of commissioned officers, though in contrast to Everson et al., (2014) findings, Faulk, Gloria, Cance, and Steinhardt, (2012) found lowered stress and depression in those who had experienced more deployments.

Limitations in the US literature exploring the mental health of military partners and associated risk factors remain, namely data gathering procedures that are conducted post deployment (regardless of which stage is the focus of the study) and the lack of longitudinal findings; though, it may have application cross

culturally. Consideration of theoretical viewpoints might hold credence in applying these findings to a UK sample of military partners.

1.5 Theory

Separation is a core feature of military partners' lifestyle, and so it is possible that such separations may impact on the health of military partners, dependent on their internal working models and attachment styles (J. Bowlby, 1969). Bowlby, (1969) asserts that attachment styles are developed on early behavioural efforts to regulate proximity to an attachment figure, such that closeness, accessibility and attentiveness of an attachment figure will help to create secure attachments whereas the opposite will lead to searching, highly vocal or isolative behaviours ultimately leading to insecure avoidant or anxious attachment styles (Ainsworth & Bell, 1970). Bowlby, (1969) asserts that these early relationships become the template (internal working model) for ways of relating and reacting in future relationships.

A recent empirical article (Vincenzes, Haddock, & Hickman, 2014) has linked Bowlby's attachment theory (Bowlby, 1969; Bowlby, Robertson, & Rosenbluth, 1952) and Ainsworth & Bell's, (1970) concept of separation anxiety (protest, despair and denial or detachment) to military wives' attachments to their partners, their emotions and the role of the deployment cycle. In this, military wives are said to protest at pre- and during-deployment phases where they experience sadness, anxiety, numbness, anger and abandonment. This protest is what Bowlby would describe as attempts to re-establish connection and proximity with whom their attachment lays. The theory continues with the concept of despair relating it to the 'during deployment' phase. The theory suggests that as time progresses and the feelings of grief subside, the partner may become withdrawn, increasingly depressed and profoundly despairing in response to failed efforts or resignation in knowing re-connection is not possible. The final phase, denial or detachment, is said to occur post deployment and is described as a reaction developed as a defence mechanism to the return of their partner following a prolonged and likely lengthy separation, resulting in anxiety. The re-introduction to one another after a perceived lengthy separation may present with on-going defences and altered ways of relating, which in turn effects communication, intimacy and pre-deployment routines (Vincenzes et al., 2014).

Other related attachment focused hypotheses might be that as separations can be regular with lots of uncertainty, that regardless of partners' efforts, they are not able to re-establish closeness, intimacy and safety on their terms which might lead to revisions of their attachment templates. Though having a secure attachment may lend itself to the development of resilience in the face of separation, it is unknown whether this resilience remains following multiple separations and whether this threat to their ways of relating might also influence their internal working model. Theorists have suggested that there is more flexibility in attachment styles in adulthood (Cozzarelli, Karafa, Collins, & Tagler, 2003; Fraley & Shaver, 2000) and might suggest that while military partners may have secure attachments with others, their attachment with their military partner may be different or their attachment style may be revised dependent on the situation that they face (i.e. frequent "abandonment" and stage of deployment). These revisions may provide support for the alterations in military partner's way of relating to their returned partner at the post-deployment stage

mentioned previously. Perceptions of social support have also been indicated in the transformation of insecure attachment styles to secure attachment styles in later life (Mikulincer & Shaver, 2012) which may be important to consider given the aforementioned challenges facing military partners in seeking/gaining support, if it exists. The lack of a proximally close family may also disturb these transformations.

Though this theory may not account for the full extent of the development of mental health problems in military partners, it has potential to partially explain the origin of how an individual may be more vulnerable to the onset of such difficulties [see extended paper for consideration of additional theories that may account for the development and maintenance of distress in military partners].

1.6 Aims

The evidence base, or lack of, points to the need for research on the impact of deployment on the mental health of UK military partners. The Forces in Mind Trust review found no research that outlines the impact of deployment specifically on partners of UK personnel (Samele, 2013) and of the evidence that comes from the US, it is reported that there is a lack of good quality and systematically sound studies exploring the psychological needs of the military community (Johnson, Sherman, & Hoffman, 2007; Verdeli et al., 2011).

Research exploring the impact of deployment on the mental health of UK military partners is important for the needs of our serving military; Mulligan et al., (2012) conducted a survey of deployed personnel examining the perceived impact of events at home and level of support for their partners' mental health and found that perceived home difficulties significantly pre-occupied deployed personnel and negatively influenced their mental health, including an increased risk of Post-Traumatic Stress Disorder (PTSD). The military spouse [partner] is no longer secondary; but crucial to the health of serving military personnel (Lewis et al., 2012) and important for reintegration back in to civilian life (Verdeli et al., 2011).

The Armed Forces Covenant published by the UK government states that military personnel, together with their families, deserve respect, support and fair treatment (Taylor, 2011). Furthermore, "Veterans should receive priority treatment within the NHS where it relates to a condition resulting from their Service" (Taylor, 2011). Due to a lack of evidence, there is currently no specific National Health Service (NHS) provision providing tailored, person centred care to this population. If research discovers that there are high levels of distress, which is linked to deployment, and known to impact significantly on serving personnel, then there may be implications for service provision for partners as well.

Based on an absence of evidence, which highlights a lack of knowledge around the levels of psychological distress in military partners, links between the military lifestyle, deployment and mental health, as well as individual and trait factors that might be influencing mental health outcomes, the aims of this study are;

1. To identify the prevalence of anxiety, depression, stress, PTSD symptoms and attachment styles in a UK population of military partners.
2. To determine whether any differences exist on mental health outcomes and attachment styles between the different stages of deployment.
3. To identify any relationships, and the extent of these, between factors related to the military lifestyle (i.e. living status), deployment stage as well as demographic data and the outcomes of the measures.

2. Research Design and Method

2.1 Design

The study design was a cross-sectional online survey of partners of British Armed Forces personnel. It is important to highlight that although the design of this study suggests that any mental health difficulties found are a function of the military experience, the cross-sectional nature means findings are correlational and not causational. Inferences and hypotheses can only be made as to the extent of the relationships found within this research.

2.2 Sample

Data was obtained from a cohort of British Armed Forces personnel partners whose partner had deployed in the past five years, was currently deployed or was due to deploy in the next twelve months. Partners were defined by being in an intimate relationship and included married husbands and wives, civil partnerships and non-married girlfriends and boyfriends of any relationship length. Ex-partners were also included because participants may have been in a relationship with a partner on deployment in the past five years, but at the time of completing the survey the relationship may have ended.

2.2.1 Eligibility Criteria

The inclusion criteria were:

- Participants not serving in the British Armed Forces. Prospective participants who were serving in the military themselves were excluded due to the increased likelihood of socialisation to the military lifestyle and deployment, compared to their civilian counterparts.
- Participants having a partner or ex-partner who is, or was, serving in the British Armed Forces, and who (1) had been on temporary deployment in the past five years ('post' deployment), (2) was on temporary deployment at the time of the survey ('on' deployment), (3) was due for temporary deployment in the following 12 months ('pre' deployment) or (4) had been on temporary deployment in the past five years and who was also due for temporary deployment in the following 12 months ('pre and post' deployment)[4].
- Participants aged 16 or over, due to consent
- Participants who could read and understand written English

[4] Temporary deployment is defined as any period of duty away from the permanent duty unit with the intent of being less than 183 days (those longer than 183 days were still included if it was an unplanned/unexpected extension).

2.3 Recruitment

Participants were mainly recruited through social media (i.e. Facebook and Twitter) with advertisements on Facebook support groups specifically for partners of British Armed Forces personnel and advertisement through military partner organisations, charities and agencies. The result of such advertisement led to the Military Wives Choir publishing the survey link in their monthly newsletter, the Army Families Federation, the Royal Air Force Families Federation and the Navy Families Federation posting on their Facebook page, as well as Forces TV who published the survey link on their Facebook wall. A number of interested individuals also shared advertisements via social media. Each of these forums of advertisement led to a snowballing sampling method.

2.4 Sample Size & Power

The study sample target was 277 with a 99% confidence level and a margin of error at 7.75%. The study sample was representative of the estimated number of military partners in the UK though this was based on a power analysis calculation of published statistics of married personnel only.

2.5 Participants

Participants completed a self-report online survey between May 2016 and September 2016. A total of 1002 individuals accessed the online survey though only 563 consented and met the inclusion criteria.

2.6 Survey

The first part of the survey contained questions on socio-demographic and deployment related questions and the second part involved measures related to the respondents' mental health.

2.7 Measures of Psychological Distress, Resilience and Relationship Styles.

The dependent variables were scores on self-report measures aimed at identifying a number of symptoms that are typically associated with depression, anxiety, stress (Depression Anxiety Stress Scales; DASS. Lovibond & Lovibond, 1995) and perceived stress (Perceived Stress Scale; PSS. Cohen, Kamarck & Mermelstein, 1983).

Two self-report measures aimed at identifying attachment styles (Experiences in Close Relationships-Revised; ECR-R. Fraley, Waller & Brennan, 2000) and trauma symptoms (Posttraumatic Checklist 5; PCL-5. Weathers et al, 2013) were also used. The ECR-R formed the inclusion of a pre-established, trait-like modulator to enable exploration of the mental health outcomes. The PCL-5 was not only used to assess levels of trauma symptoms but to also identify and attempt to control for outcomes on the mental health measures i.e. the mental health outcomes not being the result of experiencing or witnessing trauma, but increasingly likely to be related to the military lifestyle and/or deployment. The measures utilised in this study can be viewed in Table 1.

Table 1 Outcome Measures

Measure	Construct	No. of Items	Example Item	Scale direction	Internal Consistency (α) & Re-Test Reliability (r)	Construct/Convergent Validity (correlations)
Depression and Anxiety Stress Scale-42 (**DASS-42**; Lovibond & Lovibond, 1995)	Total Distress Depression Anxiety Stress	42 14 14 14	Depression: I couldn't seem to experience any positive feeling at all. Anxiety: I was aware of dryness of my mouth. Stress: I found myself getting upset by quite trivial things.	0 (did not apply to me) – 3 (Applied to me most of the time). High score = Higher distress	Depression[1 2] α.71-.97 r=.71 Anxiety[1 2] α.79-.92 r=.79 Stress[1 3] α.81-.95 r=.81	Depression: HADS r=.66[1] sADS r=.78[1] BDI r=.74 - .77[2] Anxiety: HADS r=.62[1] sADS r=.72[1] BAI r=.81 - .84[2] Stress: PANAS NA r=.67[1] PA r=-.31[1] STAI-T r=.59[3]
Perceived Stress Scale-10 (**PSS-10**; Cohen, Kamarck, & Mermelstein, 1983)	Perceived Stress	10	Q3. In the last month, how often have you felt that things were going your way?	0 (never) – 4 (very often). Four reverse scored items (4, 5, 7 & 8). High score = Higher distress	α.74-.91[4 5 6 7 8 9 10] r=.72-.88[4 5 6 7 8 9 10]	SAS-4 r=.63[4] MOS-SF36 MC r=.70[5] PC –r=.21[5] HADS r=.72-.66[6] STAI-T r=.73[7] STAI r=.60[8] PTS-AS r=.69[5] GHQ r=.61[9] BDI r=.67[10] BAI r=.58[10]
Post-traumatic stress disorder Checklist -5 (**PCL-5**; Weathers et al., 2013)	Trauma Symptoms in response to Life Events Checklist (LEC)	20	Q20. In the past month, how much were you bothered by trouble falling or staying asleep?	0 (not at all) – 4 (extremely). High score = higher symptom severity.	α. .90 - .97[11 12 13 14] r= .66 - .96[11 12 13 14]	CAPS-5 r=.79[11] PCL-S r=.87[12] PDS r=.85[13] DAPS-II r=.91[14] PSS-I r=.68[12] BDI r=.64[12] BAI r=.61[12]
Experiences in Close Relationships -Revised (**ECR-R**; Fraley, Waller, & Brennan, 2000)	Attachment anxiety Attachment Avoidance	18 18	Anxiety: I worry about being abandoned. Avoidance: I prefer not to show a partner how I feel deep down.	1 (strongly disagree) – 7 (strongly agree). Anxiety subscale; Reverse score 9 and 11. Avoidance subscale; Reverse score 20, 22, 26, 27,28.29.30.31,33 ,34,35 and 36. Average of each scale score. High score = indicative of attachment anxiety and/or avoidance.	Anxiety [15 16 17] α. .88 - .94 r= .85 - .94 Avoidance [15 16 17] α. .91-.93 r= .84-.95	Anxiety: RQ r=.69[15] SPS r=-.43[16] PSWQ r=.39[16] Avoidance: RQ r=.45[15] SPS r=-.45[16] Touch Scale -Avoidance r=.51[16] -Affectionate Proximity r=-.51[16] -Desire for Touch r=.33[16] -Safe-Haven Touch r=-.41[16]

Table Footnote:

HADS = Hospital Anxiety Depression Scale (Zigmond & Snaith, 1983); sADS = Personal Disturbance Scale (Bedford, Foulds & Sheffield, 1976); BDI = Becks Depression Inventory (Beck, Ward, Mendelson, Mock & Erbaugh, 1961); BAI = Becks Anxiety Inventory (Beck, Epstein, Brown & Steer, 1988); PANAS NA/PA = The Positive and Negative Affect Schedule Negative Affect/Positive Affect (Watson, Clark & Tellegan, 1988); STAI-T = Stait Trait Anxiety Inventory (Spielberger, Gorsuch, Lushene, Vagg & Jacobs, 1983); SAS-4 = Stress Arousal Scale-4 (Mackay, Cox, Burrows & Lazzarini, 1978); MOS-SF36 MC/PC = Medical Outcomes Study-Short Form Mental/Physical Component (Ware & Sherbourne, 1992); PTS-AS = Post Traumatic Stress-Arousal Scale (Briere, 1996); GHQ = General Health Questionnaire (Goldberg, 1972); CAPS-5 = Clinician Administered PTSD Scale for DSM-5 (Blake et al, 1995); PCL-S = PTSD Checklist specific stressor version for DSM-IV (Weathers, Litz, Herman, Huska & Keane, 1993); PDS = Posttraumatic Diagnostic Scale (Foa, Cashman, Jaycox & Perry, 1997); DAPS-II = Detailed assessment of Posttraumatic Stress, 2nd Edition (Briere, 2001); PSS-I = PTSD Symptom Scale-Interview version (Foa, Riggs, Dancu & Rothbaum, 1993); RQ = Relationship Questionnaire (Bartholomew & Horowitz, 1991); SPS = The Social Provisions Scale (Cutrona & Russell, 1987); PSWQ = The Penn State Worry Questionnaire (Meyer, Miller, Metzger & Borkovec, 1990). [1](Crawford & Henry, 2003); [2](Lovibond & Lovibond, 1995); [3](Antony, Bieling, Cox, Enns, & Swinson, 1998); [4](Smith, Everly Jr., & Haight, 2012); [5](Mitchell, Crane, & Kim, 2008); [6](Remor, 2006); [7](Roberti, Harrington, & Storch, 2006); [8](Wongpakaran & Wongpakaran, 2010); [9](Örücü & Demir, 2009); [10](Wang et al., 2011); [11](Keen, 2008); [12](Wortmann et al., 2016); [13](Foa et al., 2016); [14](Petri, 2017); [15](Sibley, Fischer, & Liu, 2005); [16](Fairchild & Finney, 2006); [17](Fraley, Heffernan, Vicary, & Brumbaugh, 2011).

2.8 Potential Confounding Variables

Confounds may include historical and current mental health difficulties that they or their partners have experienced. Locations of deployments due to variations in areas of heightened conflict (including perceived), e.g., Afghanistan compared to Cyprus, and rank of partner may be indicative of perceived dangerousness. Previous traumatic experiences may also exacerbate outcomes on the measures. These were considered in the development of the survey and analysis of results.

2.9 Analysis

To determine the prevalence of psychological distress and attachment styles in military partners [Aim 1], basic frequency and descriptive statistics were performed. Unpaired sampled T-tests were then carried out to compare and determine whether any statistical significance exists between the mean scores of military partners on the depression, anxiety, stress and perceived stress sub-scales with the general and clinical adult populations. Reference populations were not necessarily matched because of limited availability in comparison groups; though the majority of the populations used for comparisons are somewhat matched based on country, gender and average age. The DASS-42 reference population was UK based and included more females (n=965) than males (n=806) and the sample yielded a mean age of 40.9 (Crawford & Henry, 2003). The clinical reference population were matched more closely, though were U.S. based, as the majority of the sample was female (n=278) with an average age of 36.10 years (Brown, Chorpita, Korotitsch, & Barlow, 1997). The clinical population in this study was defined as individuals presenting for treatment at a centre for stress and anxiety disorders and following inter-rater agreement were diagnosed as severe, for example, obsessive-compulsive disorder, panic disorder, mood disorder, posttraumatic stress disorder, with a high degree of distress and interference in functioning associated with the diagnosis. The PSS-10 general adult reference population used was a female, UK sample in 2009 (Cohen & Janicki-Deverts, 2012); this was particularly important as the PSS-10 has been sensitive to gender and showed that women are more likely to report more stress. Similarly, previous research suggests women report more

stressful life events and are more likely to rate stressful life events as having a more negative impact compared to men (The Physiological Society, 2017).

One-way ANOVA's or non-parametric equivalents (Kruskal-Wallis H), including post hoc analyses (Mann-Whitney) were performed to assess the impact of deployment stage on each of the mental health outcomes and determine whether any differences exist in attachment styles according to stage of deployment [Aim 2]. In order to assess whether the grouped predictor and explanatory variables; demographic, military, lifestyle, deployment and attachment styles influence the extent of psychological distress [Aim 3], two-tailed correlations were performed, though unadjusted for multiple testing, as any apparent 'significant' zero-order correlations will be carried forward into the regression analyses (wherein they will be tested more stringently for independent contributions to the explanatory model.

A four-stage hierarchical multiple regression was finally conducted for each of the dependent variables; DASS-42, PSS-10 and the PCL-5 to examine incremental contribution of the different variable-groupings (demographic, military lifestyle, deployment and attachment style) in accounting for the mental health outcomes of interest. The process of deriving each of the variable-groupings is theoretically organised, driven and developed based on assumptions from previous research and so are constructed based on face validity, rather than any factorial analysis. Group one, in particular, included trauma symptoms alongside demographic variables in order to allow inferences to be made that any relationships found between mental health and military variables, are over and above what would be expected from witnessing or experiencing trauma.

IBM Statistical Package for the Social Sciences Version 23 (IBM SPSS Statistics for Windows, Version 25) was used to manage and perform statistical analysis on the data. Results were summarised using standard descriptive statistics: totals and percentages for categorical data and means and standard deviations (SD) as well as ranges for continuous variables. Due to the exploratory aims of this study, variables have been included based on hypothesised impact and statistical corrections were not always performed; minimising Type 2 errors, rather than Type 1, were of priority.

3. Results[5]

Sample descriptives are presented to provide context for understanding the data, followed by correlational analysis to outline the inter-dependence of variables before the multiple regression analyses and T-tests address the other study aims. There were varying completion rates for each of the measures and demonstrate a gradual decline in numbers, based on the order of which the measures were presented on the online survey; DASS-42 (n=380), PSS-10 (n=364), PCL-5 (n=275) and the ECR-R (n=236); it is likely this decline is in response to length of time taken to work through the survey, and will be considered as part of the study's limitations.

[5] Due to the scope of the data gathered, some secondary analysis has been conducted though is presented in the extended paper. Future analysis is likely to be carried out.

3.1 Sample characteristics

Descriptive statistics and frequencies were used to describe the study sample. On average, the participants were 35 years of age (SD = 7.6), had been in their relationship for 11 years (SD = 6.4), had two children, and their partner had been in the military for 14 years (SD = 7.4). A breakdown of some sample characteristics is provided in Table 2.

Table 2 Demographic characteristics of respondents[6].

	All	
	n	*%*
Gender (N=563)		
Male	8	1.4%
Female	552	98%
Prefer not to say	3	0.5%
Ethnicity (N=563)		
White Background	558	99.1%
Chinese	1	0.2%
Other Mixed Ethnic Background	1	0.2%
Prefer not to say	3	0.5%
Marital Status (N=563)		
Married/Civil Partnership	491	87.3%
Engaged	13	2.3%
In a Relationship	38	6.7%
Split up/Separated/Divorced	19	3.4%
Widowed	2	0.4%
Children (n=561)		
Yes	426	75.9%
No	121	21.6%
Pregnant with First Child	14	2.5%
Military Branch Partner (N=543)		
Royal Navy	57	10.5%
Royal Marines	17	3.1%
British Army	172	31.7%
Royal Air Force	297	54.7%
Rank Partner (N=543)		
Non-Commissioned (lower ranks)	425	78.3%
Commissioned (higher ranks)	118	21.7%

[6] All sample characteristics and full ranges can be found in the extended paper.

	All	
	n	*%*
Number of Prior Partner Deployments in the Past 5 Years (N=466)		
1 to 5	396	84.9%
6 to 10	46	9.9%
11 to 29	19	4.0%
30+	5	1.1%
	M	*SD*
Ages in Years (N=563)	35.80	7.61
Duration of the Relationship in Years (N=563)	10.86	6.39
Years of Service Partner (N=543)	14.3	7.35

3.2 Prevalence of mental health difficulties and attachment styles.

The DASS-42 cut-off scores for depression, anxiety and stress were used (Lovibond & Lovibond, 1995) and the PSS-10 scores were categorised into Low, Average and High levels of perceived stress (Cohen et al., 1983). The Cronbach's alpha reliability for the DASS-42 and PSS-10 in military partners was .978 and .884 respectively. Table 3 shows the percentage of military partners that fell within each severity range on each of the DASS-42 sub-scales and the percentage of military partners that fell within each of the categories on the PSS-10.

Table 3 Percentage of Military Partners who fall within each category on the DASS-42 and PSS-10.

	Normal (0 to 9)	Mild (10 to 13)	Moderate (14 to 20)	Severe (21 to 27)	Extremely Severe (28+)
N=380 Depression	0%	13.9%	40.3%	23.7%	22.1%

	Normal (0 to 7)	Mild (8 to 9)	Moderate (10 to 14)	Severe (15 to 19)	Extremely Severe (20+)
N=380 Anxiety	22.1%	35%	24.2%	9.2%	9.5%

	Normal (0 to 14)	Mild (15 to 18)	Moderate (19 to 25)	Severe (26 to 33)	Extremely Severe (34+)
N=380 Stress	13.7%	16.8%	32.4%	19.7%	17.4%

	Much Lower than Average (0 to 7)	Slightly Lower than Average (8 to 11)	Average (12 to 15)	Slightly Higher than Average (16 to 20)	Much Higher than Average (21+)
N=364 Perceived Stress	7.1%	7.7%	15.4%	24.7%	45.1%

T-Test analysis indicates that military partners are statistically and significantly more depressed, anxious and stressed than the general (Crawford & Henry, 2003) and clinical populations (Brown et al., 1997) and are also statistically and significantly more likely to perceive themselves as more stressed when compared to the general adult female population (Cohen & Janicki-Deverts, 2012). Table 4 presents the results of the T-Test analyses.

Table 4 Results of t-tests and descriptive statistics depression, anxiety, stress and perceived stress by population samples.

	Military Partners				General Population Sample			95% CI for Mean Difference				Clinical Sample			95% CI for Mean Difference		
	M	SD	n		M	SD	n		t	df		M	SD	n		t	df
Depression	22.1	8.9	380		5.55	7.48	1771	15.69 , 17.41	37.8*	2149		10.65	9.3	437	16.26 , 17.58	17.9*	2149
Anxiety	20.48	8.08	380		3.56	5.39	1771	16.26 , 17.58	50.3*	2149		10.9	8.12	437	8.46 , 10.70	16.9*	815
Stress	24.43	9.25	380		9.27	8.04	1771	14.24 , 16.08	32.4*	2149		21.1	11.15	437	1.91 , 4.75	4.6*	815
Perceived Stress	19.55	7.5	364		16.14	7.56	1032	2.51 , 4.31	7.4*	1394							
* $p < .001$.																	

The PCL-5 scores were categorised based on whether an individual would screen positively or negatively for trauma symptomatology; a score of 36+ would provide a positive screen of trauma (Weathers, Litz, et al., 2013). As the PCL-5 is used as a screening tool of trauma symptomatology and provides an indication or suggestion for further investigation, there are no clinical or non-clinical norms. Cronbach's alpha reliability for the PCL in a military partner population was .952.

Descriptive statistics indicate that almost half of military partners in this study would be considered symptomatic of trauma (N=275, positive screen=47.6%, negative screen=52.4%). The mean score of military partners in this study was 39.12 (SD=17.8) and so, when considering the cut-off score, the 'average' military partner in this study was positively symptomatic of trauma symptoms. The Life Events Checklist (LEC; Weathers, Blake, et al., 2013) was used to anchor the respondents' thoughts when answering questions related to previous traumas on the PCL-5 and frequencies show 12.1% had either experienced a traumatic event themselves or had witnessed a trauma at least once. When visually analysing the responses given for what their most traumatic experience was, it was commonly a personal experience unrelated to their partner's deployment. See extended paper for more detailed information.

Almost all of the military partners (90.6%) reported that their Armed Forces partner had not been diagnosed with a mental health problem in the past five years. A total of 18 military partners, 9.4% of the sample, disclosed their partners diagnosis; seven reported depression, one reported anxiety, one reported anxiety and depression, six reported PTSD, one reported anger, stress and paternal post-natal depression, one reported anger issues and one reported obsessive-compulsive disorder.

Military partners generally displayed secure attachment styles with low mean scores on the attachment avoidance (M=2.8, SD=1.25) and attachment anxiety dimensions (M=3.5, SD=1.38).

3.3 Differences in mental health outcomes and attachment styles according to deployment stage

3.3.1 Analysis of Variance (ANOVA) and Non-Parametric Equivalents

Military partners were categorised into four groups based on current stage of deployment; 1) post-deployment and pre-deployment, 2) pre-deployment, 3) on-deployment, 4) post-deployment, to determine whether mental health outcomes differ according to stage of deployment.

Due to parametric assumptions being violated, Kruskal-Wallis H test was conducted to determine if there were differences in the mental health outcome scores between the four stages of deployment: Post and Pre (N=123), Pre (N=39), On (N=102) and Post (N=202) deployment groups. Distributions of mental health scores were similar for all groups, as assessed by visual inspection of boxplots. Median scores between the four groups were found to be non-significant; Depression, $x^2(3)=6.716$, p=.082, Anxiety, $x^2(3)=4.147$, p=.246, Stress, $x^2(3)=7.316$, p=0.62, Perceived Stress, $x^2(3)=6.148$, p=.105 and Trauma Symptoms, $x^2(3)=1.623$, p=.654.

Similarly, when assessing for differences between reports on how much deployment impacts on their health and wellbeing on a rating scale of 1 (not at all) to 5 (extremely) at pre (N=231), on (N=231) and post (N=231) deployment stages, parametric assumptions were not met. Kruskal-Wallis H was therefore conducted to determine if there were any differences on reported impact severity dependent on the stage of deployment they currently were. The distribution of scores were similar for all groups, as assessed by visual inspection of box plots. Median scores between the four groups were, however, found to be non-significant; rating pre deployment, x2(3)=.068, p=.995, rating on deployment, x2(3)=1.569, p=.666, rating post deployment, x2(3)=1.426, p=.700.

This analysis showed no significant differences between the four stages of deployment, though frequency statistics on the reported impact of deployment on health and wellbeing showed that almost half of military partners felt it impacted on their health and wellbeing very or extremely at pre-deployment (46.7%), 63.2% during deployment and 42.9% post deployment.

Post hoc analyses were conducted using Mann-Whitney U tests between stages of deployment to verify previous analysis but to also determine where any differences might specifically exist. On further inspection, perceived stress scores for those post- and pre-deployment (mean rank=131) were statistically and significantly higher than those post deployment (mean rank=111), U=5330, z=-2.161, p=.031. There was also evidence that depression, U=6316, z==2.576, p=.010, and stress, U=6243, z=-2.699, p=.007, were statistically significantly higher on deployment (mean rank=144; 145 respectively) than post deployment (mean rank=120; 119 respectively).

Attachment styles were then considered; as parametric assumptions were not met, a Kruskal-Wallis test was conducted to determine any differences between attachment avoidance based on stage of deployment. A one-way ANOVA was conducted to determine differences between attachment anxiety scores based on deployment stage, as assumptions were met. As before, Mann-Whitney U post hoc tests were conducted to confirm these results but also to determine where differences might exist when considering two stages of deployment separately. On inspection, the results confirm previous analysis with the exception of statistically and significantly higher attachment avoidance scores post deployment (mean rank 87.06) compared to on deployment (mean rank 71.15), U=2485, z=-2.139, p=.032.

3.4 Relationship between variables and mental health outcomes

3.4.1 Correlation analysis

Correlations indicate what would be expected between distress measures and between demographic variables (for instance, living together full-time and longer relationships are highly correlated with having children). Small to medium negative correlations were found between age and depression, anxiety, stress, and perceived stress and rank. A statistically significant negative correlation also existed between length of relationship and perceived stress. These correlations indicate that as age and length of relationship increases, experiences of depression, anxiety, stress and perceived stress decrease and the more likely their

partner will be lower ranking. Small positive correlations were found between lower ranks and depression, perceived stress and attachment anxiety.

Small positive correlations existed between whether partners live together full time or part-time and experiencing or witnessing trauma and trauma symptom outcomes. Small to medium positive correlations were evident between experiencing trauma and depression, anxiety, stress, perceived stress and trauma symptom outcomes. Small positive correlations also existed between witnessing a trauma and perceived stress and trauma symptoms.

Medium positive correlations were found between attachment anxiety and depression, anxiety, stress, perceived stress, experiencing trauma and trauma symptoms. Small to medium positive correlations were also evident between attachment avoidance and depression, anxiety, stress, perceived stress, experiencing trauma and trauma symptoms.

There was no evidence to suggest that having children, the number of times previously deployed or whether their partner was in a location of heightened tension is related to the outcomes on depression, anxiety, stress and perceived stress. Table 4 shows an overview of correlations between predictor variables and outcome measures. Although some correlations indicated a lack of relationship between some of the pre-selected predictor variables and outcome measures, they were still included for the regression models because they were prior planned but to also account for possible suppressor effects when zero-order correlations are conducted compared to concurrent modelling (regression analysis).

Table 5 Correlations

		DEPtot	ANXtot	STRESStot	PSStot	PCLtot	Experienced Trauma	Witnessed Trauma	Attachment Anxiety	Attachment Avoidance
DEPtot	Pearson Correlation	1	.798**	.869**	.690**	.557**	.145**	0.094	.507**	.421**
	Sig. (2-tailed)		0	0	0	0	0.005	0.067	0	0
	N	380	380	380	364	275	380	380	236	236
ANXtot	Pearson Correlation		1	.824**	.599**	.578**	.143**	0.061	.419**	.298**
	Sig. (2-tailed)			0	0	0	0.005	0.236	0	0
	N		380	380	364	275	380	380	236	236
STRESStot	Pearson Correlation			1	.708**	.545**	.142**	0.083	.501**	.364**
	Sig. (2-tailed)				0	0	0.005	0.105	0	0
	N			380	364	275	380	380	236	236
PSStot	Pearson Correlation				1	.481**	.187**	.136**	.450**	.311**
	Sig. (2-tailed)					0	0	0.009	0	0
	N				364	275	364	364	236	236
PCLtot	Pearson Correlation					1	.346**	.167**	.453**	.414**
	Sig. (2-tailed)						0	0.005	0	0
	N					275	275	275	236	236
Experienced Trauma	Pearson Correlation						1	.604**	.210**	.203**
	Sig. (2-tailed)							0	0.001	0.002
	N						1002	1002	236	236
Witnessed Trauma	Pearson Correlation							1	.135*	0.068
	Sig. (2-tailed)								0.038	0.297
	N							1002	236	236
Attachment Anxiety	Pearson Correlation								1	.569**
	Sig. (2-tailed)									0
	N								236	236
Attachment Avoidance	Pearson Correlation									1
	Sig. (2-tailed)									
	N									236

Table 5 Correlations Continued

		age	Rank	Live together full-time	Live together part-time	Children	Length of Relationship	No. of times deployed in past 5 years	Location heightened tension
age	Pearson Correlation	1	-.222**	0.011	-0.002	.231**	.689**	0.074	-.349**
	Sig. (2-tailed)		0	0.8	0.953	0	0	0.112	0.003
	N	560	540	560	560	560	560	464	70
Rank	Pearson Correlation		1	0.029	-0.029	.107*	-.171**	-0.051	0.135
	Sig. (2-tailed)			0.504	0.5	0.012	0	0.268	0.265
	N		543	543	543	543	543	466	70
Live together full-time	Pearson Correlation			1	-.271**	.667**	.124**	-0.035	-0.01
	Sig. (2-tailed)				0	0	0.003	0.449	0.932
	N			1002	1002	1002	563	466	70
Live together part-time	Pearson Correlation				1	.148**	-0.082	0.028	0.063
	Sig. (2-tailed)					0	0.053	0.548	0.603
	N				1002	1002	563	466	70
Children	Pearson Correlation					1	.325**	-0.038	-0.099
	Sig. (2-tailed)						0	0.412	0.414
	N					1002	563	466	70
Length of Relationship	Pearson Correlation						1	0.051	-0.018
	Sig. (2-tailed)							0.276	0.881
	N						563	466	70
No. of times deployed in past 5 years	Pearson Correlation							1	-.315**
	Sig. (2-tailed)								0.008
	N							466	70
Location heightened tension	Pearson Correlation								1
	Sig. (2-tailed)								
	N								70

3.4.2 Hierarchical Regression

Model 1: Demographic Variables (age, children, length of relationship, living status and experienced or witnessed trauma).

This model statistically and significantly predicted depression (R^2=.055, F(9, 992)=6.370, p=.000), anxiety (R^2=.036, F(9, 992)=5.183, p=.000), stress (R^2=.050, F(9, 992)=5.820, p=.000), perceived stress (R^2=.073, F(9, 992)=8.708, p=.000) and trauma symptoms (R^2=.089, F(9, 992)=10.792, p=.000).

Model 2: Military Lifestyle Variables (rank, number of previous deployments and location of current deployment).

The addition of rank, number of previous deployments and current deployment location in an area of heightened tension did not lead to a significant increase in model prediction for any of the outcome variables over and above model 1 (depression; R^2 of .060, F(12, 989)=5.215, p=.164, anxiety; R^2 of .049, F(12, 989)=4.285, p=.196, stress; R^2=.052, F(12, 989)=4.504, p=.630, perceived stress; R^2=.076, F(12, 989)=6.822, p=.328, trauma symptoms; R^2=.091, F(12, 989)=8.251, p=.576).

Model 3: Deployment Stage

The inclusion of the four-stages of deployments led to a significant increase in the amount of variance explained for all outcome measures (depression, R2=.078, F(16, 985)=5.195, p=.001; Anxiety, R2=.062, F(16, 985)=4.061, p=.011; Stress, R2=.068, F(16, 985)=4.525, p=.002; Perceived Stress, R2=.088, F(16, 985)=5.955, p=.013; Trauma Symptoms, R2=.101, (F(16, 985)=6.915, p=.028).

Specifically, post-deployment significantly predicted each of the outcome measures (depression p=.015; anxiety p=.016; stress p=.007; perceived stress p=.004 and trauma p=.005). Pre-deployment significantly predicted an increase in depression (p=.032) and perceived stress (p=.004), and on-deployment significantly predicted trauma related symptoms (p=.005).

Model 4: Attachment Styles (Full Model)

When factors relating to attachment styles were entered in the final model the predictive utility of the model for each outcome variable was significantly improved. The predictor variables will be considered in turn dependent on their significance for each of the outcome variables.

Depression

Age and post deployment were statistically associated with a reduction in depression but increased length of relationship, the on-deployment stage and attachment anxiety and avoidance were predictive of greater levels of depressive symptoms. The overall model for depression (R^2=.236, F(18, 983)=16.868, p=.000) accounted for 23.6% of the total variance of depression and is of a relatively medium effect size (Cohen, 1988).

Table 6 Multiple Regression for Depression

Depression								
	Model 1		Model 2		Model 3		Model 4	
Variable	B	β	B	β	B	β	B	β
(Constant)	28.485**		26.987**		27.010**		16.386**	-.245
Age	-.238**	-.247	-.226**	-.234	-.224**	-.232	-.236**	-.027
Children	.196	.018	-.030	-.003	-.173	-.016	-.300	.034
No children	.584	.035	.567	.034	.499	.030	.570	.207
Length of relationship	.176**	.154	.184**	.161	.200**	.175	.237**	-.010
Live together full-time	-1.229	-.111	-1.051	-.095	-.290	-.026	-.105	.060
Live together part-time	.208	.010	.412	.021	1.164	.058	1.191	.013
Do not live together	.581	.016	.833	.023	1.882	.052	.450	.082
Experienced trauma	.500	.135	.490	.132	.554	.150	.304	.001
Witnessed trauma	.070	.018	.073	.019	.053	.014	.004	.029
Rank			1.218*	.067	1.169*	.065	.522	-.034
No. of previous deployments			-.023	-.012	-.073	-.038	-.065	-.039
Location of heightened tension			-.735	-.021	-.708	-.021	-1.337	.012
Post- and pre-deployment					-.340	-.020	.193	-.054
Pre-deployment					-2.239*	-.079	-1.539	.077
On-deployment					.786	.043	1.397*	-.113
Post-deployment					-1.708*	-.125	-1.550*	.278
Attachment anxiety							2.268**	.183
Attachment avoidance							1.654**	

** 0.01 * 0.05

Anxiety

Age, and post-deployment were significantly associated with a reduction in anxiety and increased length of relationship was significantly associated with an increase in anxiety symptoms alongside previous traumas and attachment anxiety and avoidance.

The overall model was statistically significant in predicting Anxiety, R^2=.173, F(18, 983)=11.425, p=.000. That is, the model accounts for 17.3% of the total variance explained of Anxiety and reflects a small to medium effect size.

Table 7 Multiple Regression for Anxiety

Anxiety								
	Model 1		Model 2		Model 3		Model 4	
Variable	B	β	B	β	B	β	B	β
(Constant)	25.317**		26.771**		26.702**		18.632**	
Age	-.182**	-.208	-.177**	-.203	-.167**	-.191	-.171**	-.196
Children	-1.625	-.162	-1.686	-.168	-1.771	-.176	-1.862	-.185
No children	-1.683	-.110	-1.643	-.108	-1.696	-.111	-1.615	-.106
Length of relationship	.140**	.135	.145**	.140	.150**	.145	.178**	.172
Live together full-time	.814	.082	.850	.085	1.458	.146	1.580	.158
Live together part-time	1.944	.107	1.978	.109	2.478	.137	2.532	.140
Do not live together	2.136	.066	2.292	.070	2.955	.091	1.809	.056
Experienced trauma	.530**	.158	.531**	.159	.596**	.178	.418**	.125
Witnessed trauma	-.082	-.023	-.086	-.024	-.086	-.024	-.137	-.039
Rank			.552	.034	.425	.026	-.055	-.003
No. of previous deployments			-.037	-.021	-.084	-.049	-.072	-.041
Location of heightened tension			-1.656	-.053	-1.614	-.052	-2.153	-.069
Post- and pre-deployment					.388	.026	.786	.052
Pre-deployment					-.628	-.024	-.097	-.004
On-deployment					-.412	-.025	-.035	-.002
Post-deployment					-1.552*	-.125	-1.376*	-.111
Attachment anxiety							2.112**	.286
Attachment avoidance							.730*	.089

** 0.01 * 0.05

Stress

Age and post-deployment were also significantly associated with a reduction in stress symptoms and length of relationship and experiencing trauma was significantly associated with an increase in stress related symptoms alongside attachment anxiety and avoidance. The overall model was statistically significant in predicting Stress, R^2=.218, F(18, 983)=15.200, p=.000. That is, the model accounts for 25.8% of the total variance explained of Stress and reflects a small effect size.

Table 8 Multiple Regression for Stress

Stress								
	Model 1		Model 2		Model 3		Model 4	
Variable	B	β	B	β	B	β	B	β
(Constant)	31.351**		31.908**		31.838**		21.100**	
Age	-.231**	-.231	-.226**	-.226	-.221**	-.221	-.229**	-.228
Children	-.189	-.016	-.253	-.022	-.391	-.034	-.515	-.045
No children	-1.001	-.057	-.980	-.056	-1.031	-.059	-.935	-.054
Length of relationship	.104*	.088	.108*	.091	.121*	.102	.159**	.134
Live together full-time	-.439	-.038	-.391	-.034	.410	.036	.580	.051
Live together part-time	.223	.011	.269	.013	.970	.047	1.027	.049
Do not live together	-.112	-.003	.013	.000	.959	.026	-.540	-.015
Experienced trauma	.550**	.144	.548**	.143	.610**	.159	.368*	.096
Witnessed trauma	.023	.006	.020	.005	.004	.001	-.058	-.014
Rank			.516	.028	.456	.024	-.188	-.010
No. of previous deployments			-.008	-.004	-.064	-.032	-.051	-.025
Location of heightened tension			-1.076	-.030	-1.037	-.029	-1.728	-.049
Post- and pre-deployment					-.318	-.018	.214	.012
Pre-deployment					-1.056	-.036	-.349	-.012
On-deployment					.652	.035	1.192	.063
Post-deployment					-1.964**	-.138	-1.755**	-.124
Attachment anxiety							2.639**	.312
Attachment avoidance							1.202**	.128

** 0.01 * 0.05

Perceived Stress

Age and post deployment was also significantly associated with a reduction in perceived stress outcomes while increased length of relationship, previous trauma experiences and attachment anxiety and avoidance were associated with an increase in perceived stress symptoms. The full model was statistically significant in predicting perceived stress, R^2=.199, F(18, 983)=13.598, p=.000. That is, the model accounts for 19.9% of the total variance explained of perceived stress and reflects a small to medium effect size.

Table 9 Multiple Regression for Perceived Stress

Perceived Stress								
	Model 1		Model 2		Model 3		Model 4	
Variable	B	β	B	β	B	β	B	β
(Constant)	25.850**		23.589**		23.648**		16.245**	
Age	-.199**	-.248	-.189**	-.235	-.185**	-.231	-.189**	-.236
Children	1.104	.120	.916	.099	.856	.093	.771	.084
No children	1.275	.091	1.234	.088	1.222	.087	1.294	.093
Length of relationship	.057	.060	.061	.065	.069	.072	.095*	.099
Live together full-time	-1.831	-.200	-1.684	-.184	-.831	-.091	-.718	-.078
Live together part-time	-1.808	-.109	-1.626	-.098	-.826	-.050	-.780	-.047
Do not live together	-1.914	-.064	-1.765	-.059	-.795	-.027	-1.842	-.062
Experienced trauma	.495**	.161	.489**	.160	.563**	.183	.398**	.130
Witnessed trauma	.125	.039	.133	.041	.139	.043	.093	.029
Rank			.778	.052	.688	.046	.247	.016
No. of previous deployments			-.037	-.023	-.073	-.046	-.062	-.039
Location of heightened tension			.403	.014	.432	.015	-.057	-.002
Post- and pre-deployment					-.416	-.030	-.050	-.004
Pre-deployment					-1.736*	-.074	-1.249	-.053
On-deployment					-.455	-.030	-.102	-.007
Post-deployment					-1.657**	-.146	-1.501**	-.132
Attachment anxiety							1.904**	.281
Attachment avoidance							.714**	.095

** 0.01 * 0.05

Trauma Symptoms

Age and post deployment continued to show significant associations in reductions of trauma symptom and length of relationship and previous traumas were significantly associated with increased trauma symptomatology alongside attachment anxiety and avoidance. The overall model was statistically significant in predicting trauma symptoms, R^2=.280, F(18, 983)=21.197, p=.000. Thus, the model accounts for 28% of the total variance explained of trauma symptoms and reflects a medium effect size (J. Cohen, 1988).

Table 10 Multiple Regression Trauma Symptoms

Trauma Symptoms								
	Model 1		Model 2		Model 3		Model 4	
Variable	B	β	B	β	B	β	B	β
(Constant)	45.365**		44.646**		44.808**		25.704**	
Age	-.229**	-.140	-.217**	-.133	-.208**	-.127	-.232**	-.142
Children	.793	.042	.594	.032	.701	.037	.471	.025
No children	-.587	-.021	-.591	-.021	-.420	-.015	-.306	-.011
Length of relationship	.159	.082	.167*	.086	.160	.082	.227**	.117
Live together full-time	-3.227	-.172	-3.087	-.165	-1.090	-.058	-.747	-.040
Live together part-time	-.117	-.003	.057	.002	1.774	.052	1.808	.053
Do not live together	-.241	-.004	-.011	.000	1.657	.027	-.892	-.015
Experienced trauma	1.852**	.295	1.851**	.295	2.002**	.319	1.547**	.247
Witnessed trauma	-.035	-.005	-.030	-.005	.048	.007	-.033	-.005
Rank			.974	.032	.759	.025	-.410	-.013
No. of previous deployments			-.082	-.025	-.112	-.035	-.102	-.031
Location of heightened tension			-.790	-.014	-.729	-.013	-1.831	-.031
Post- and pre-deployment					-1.741	-.061	-.780	-.027
Pre-deployment					-1.156	-.024	.104	.002
On-deployment					-3.627**	-.118	-2.488	-.081
Post-deployment					-3.292**	-.142	-3.035**	-.131
Attachment anxiety							3.898**	.281
Attachment avoidance							3.217**	.210

** 0.01 * 0.05

4. Discussion

This article presents the first UK and inclusive large-scale epidemiological study to examine the mental health of UK military partners and the impact of deployment. There are a number of important findings.

In comparison to an adult general and clinical population, results indicate significantly elevated levels of depression, anxiety and stress. Perceived stress was also within the 'slightly higher than average' range for military partners and is higher than would be expected in the general adult population. It is possible to draw hypotheses that exacerbated mental health outcomes found in this study are influenced by 'the military' as a common factor. This is in line with what would be expected based on the unique lifestyle faced by military partners (Hatch et al., 2013) but also with findings from US literature highlighting prevalence rates of major depression are the same, if not worse, than those actually deployed (Blank et al., 2012; Eaton et al., 2008).

The majority of military partners were within the positive symptomatic range for trauma related symptoms; generally, in response to personal traumas unrelated to their partner's deployment. Previous research has suggested that military partners may not experience vicarious trauma but may re-experience their own traumas when witnessing their partners' distress symptoms (Hamilton et al., 2009). The majority of the military partners in this sample reported that their partner was not diagnosed with a mental health problem. This is in line with low prevalence rates for PTSD and other common mental health problems in currently serving UK military personnel (Rona et al., 2016). These findings demonstrate that partners of British Armed Forces may not be influenced by vicarious or re-experiencing trauma related to their partner's deployment, but may still be influenced by other triggers or mechanisms related to the military lifestyle, such as separation. The results indicating military partners were positively symptomatic for trauma may also contradict the notion that the sample in this study was representative and it is unknown whether traumatic experiences found here, reflects a general adult population; it might also continue to highlight problems with self-selecting participants, and that the sample were more distressed than what we might find in a larger representative sample of military partners.

Lower age and anxious attachment styles significantly predicted increased depression, anxiety, stress, perceived stress and trauma symptomology. Longer relationships significantly predicted higher levels of distress, except perceptions of stress. The deployed stage and avoidant attachment styles significantly predicted increased depression, stress and trauma symptoms, but did not predict anxiety or perceived stress. Having a partner higher in rank was correlated with increased depression and experiences of trauma significantly predicted increased anxiety, perceived stress and trauma symptomology, but not depression or stress. Post deployment stage significantly predicted a reduction in all mental health outcomes. Pre-deployment predicted a reduction in depression, and living together full-time was correlated with lowered trauma symptomatology.

Of interest is the relationship between stage of deployment and the extent to which it might influence mental health. The pre-deployment stage demonstrated lower rates of depression; previous research suggested that partners protest at this stage and can experience emotions such as anger as well as sadness. These findings

might support this view, but it conflicts with other evidence that has found elevated levels of depression during the pre-deployment stage (Erbes et al., 2012). It may best be explained in that the physical separation itself has not yet taken place, and so "normal" life has yet to be perturbed. Post deployment predicted a reduction in all mental health outcomes; this has been previously documented in US literature (Beckman et al., 1979; Lester et al., 2012; Rosen, 1995; Skomorovsky, 2014), however, it still remains that military partners are a significantly distressed group, even at post deployment stage.

The results of this study suggest manifestations of mental health alter according to different points of deployment, and are likely to represent a different understanding of the impact of deployment on the mental health of UK military partners, to that developed for children in the US who experience deployments of 11+ months (Pincus et al., 2001). Analysis of comparisons between the four groups based on deployment stage found perceived stress at post and pre-deployment stage was significantly higher than for those at post deployment stage. Previous literature has not identified groups of military partners in a post and pre-deployment stage and so it is difficult to compare mental health outcomes. The findings do suggest that perhaps the closer deployments are together, the higher perceptions of stress will be. Depression and stress were also significantly higher during the deployment stage compared to the post deployment stage. This is consistent with US evidence, which suggests that multiple stressors are more likely to be evident during this stage (Pincus et al., 2001). These results continue to implicate the deployed stage as a high-risk stage for military partners for developing mental health difficulties.

No differences in attachment styles were found across the four stages of deployment, except avoidant attachment styles, which were more evident in the post deployment stage than in the on-deployment stage. This finding supports the concept of separation anxiety, which describes post-deployment reactions as denial and/or detachment as a defence to difficult emotions that may arise in response to the return of their partner (Vincenzes et al., 2014). These results may explain the reduction of depression at the post deployment stage. Avoidant strategies may be used to protect military partners against the underlying depression that is evidenced throughout deployment, which was exacerbated on deployment, but is now "managed" or "defended against" through the use of avoidant attachment styles. These results might also support the idea that attachment styles may be situation dependent and revised accordingly (Cozzarelli et al., 2003; Fraley & Shaver, 2000; Mikulincer & Shaver, 2012)[7]. Table 11 shows a summary of significant findings from the outcome measures based on stage of deployment.

[7] The extended paper includes a more critical exploration of the psychological theory that might underpin these results as well as the inclusion of secondary analysis.

Table 11 Overview of significant findings based on stage of deployment

	Findings of this study	Previous Findings
Post & Pre Deployment	Higher Perceived Stress	
Pre-Deployment	Lower Depression	Low or no Depression[8], Higher Stress[1] and Depression[2]
On-deployment	Higher Stress and Depression	Higher Perceived Stress[3], Anxiety and Depression[1 4 5 6]
Post-deployment	Lowered Depression, Perceived Stress, Stress and more evidence of Avoidant Attachment styles	Lowered Anxiety and Depression[5 7]
	Significantly high levels of Depression, Anxiety, Stress, Perceived Stress throughout stages of deployment	

Table 11 Footnote:

[1]Warner et al., (2009); [2]Erbes et al., (2012); [3]Burton at al., (2009); [4]Andres et al., (2012); [5]Beckman et al., (1979); [6]Mansfield et al., (2010); [7]Eaton et al., (2008); [8]Skomorovsky., (2014).

The results suggesting military partners of higher-ranking officers are more likely to present with higher levels of depression, are findings not consistent with previous US research. It has typically been thought that partners of lower ranking officers are more likely to experience greater depression due to the higher likelihood of being front line, with perceptions of increased danger, and in turn elevated levels of worry, which is likely to exacerbate mental health difficulties (Everson et al., 2014; Faulk et al., 2012; Rosen, 1995). The lowered numbers of commissioned officers compared to non-commissioned officers in this sample of military partners may well have influenced this.

There is little empirical research that explores the influence of longer versus shorter relationship lengths on the mental health of military partners, though the research that does exist might allow inferences to be made about the current findings. Previous literature suggests that increased number of deployments impact significantly on stress and anxiety (Everson et al., 2014; Wexler & McGrath, 1991), so one can assume that this may only be possible through having been in more long-term relationships.

Of the risk factors highlighted earlier, living together full-time was hypothesised to exacerbate mental health due to less exposure of separation. The current findings do not support this; living together full-time was found to be related to lower trauma symptomatology, leading to possible hypotheses around the importance of partner support, fewer months spent apart and more attachment security. These results may also support the view that partners' high levels of trauma symptomatology are not necessarily the result of vicarious or re-experiencing trauma, given that individuals in this group live with their partner post

deployment (in which PTSD is most likely to be observed) but may be triggered by separation, length and/or frequency of separations (likely to be higher in those living with their partner part-time) or other factors related to the military lifestyle.

5. Limitations

There are limitations to this study, which require consideration. Of some concern is the sample composition; the majority of the respondents' partners were branched in the RAF, likely due to the author's personal involvement and so is less likely to be representative of the other service branches in the UK. Considering that all of the Military partners within this study would meet criteria for varying degrees of depression, alongside the use of support groups as the main forum for recruitment, there is an increased likelihood of sampling those who are experiencing distress with higher support needs and so limiting the representativeness of this sample; though it is important to highlight that support groups are not necessarily for mental health support but as a forum of advice. Although some individual respondents did not meet criteria for mental health distress, it is possible that those who have been affected by mental health and deployment are more likely to respond compared to those who have not necessarily been affected negatively, further limiting the generalizability of the results.

The clinical measures used for this study have not previously been validated on a UK military population and although this study explores stages of deployment, the design meant exploration was between participants rather than within (i.e. not cohort designed). The role of personal trauma is also worth considering in light of limitations to the study as the mental health outcomes have a higher potential of being explained due to trauma; though this is arguable given the other (almost) 50% of participants who have experienced no trauma. A number of statistical tests were also applied to the data and so the chance of type 1 error is increased. The similarities the results have to previous research provide some credence, however, the results are preliminary and so require replication. Finally, there appeared to be a high rate of drop-out and from informal feedback, it appeared to be in response to the length of the survey; perhaps future research could include shorter surveys specifically investigating mental health constructs.

Despite these limitations, results from the current study strongly emphasise the need for greater understanding of the mechanisms involved in the significantly high levels of depression, anxiety, stress and perceived stress. In line with US literature, it reveals a significant need and highlights the consideration required from specific mental health providers, policy makers and others who support military partners.

6. Future Research

Further quantitative research is required to provide evidence for the prevalence of mental health difficulties in a sample of UK military partners whilst taking into consideration implications of sampling bias and design limitations; longitudinal and repeated measure designs would provide a more reliable understanding and clarity of mental health across the stages of deployment. Studies of this kind might benefit from investigating the specific experiences associated with the lifestyles unique to military lifestyles, including other types of separations, and its relationship to mental health to further understand the risk factors

involved in the development of mental health difficulties in UK military partners and in turn increase knowledge of at risk groups. Research continuing to explore the utility of an emotional cycle of deployment, considering other characteristics of deployments, such as repetition, specifically for UK military partners is essential, and is likely to be followed up by the current authors.

Qualitative accounts might provide a rich and in-depth understanding of the factors mediating and moderating the elevated levels of distress found in this study of military partners; this will be explored in a proceeding study though will not provide the detail required to account fully for the other factors associated with the military lifestyle, aside from deployment. More in-depth qualitative enquiry is more likely to tap into processes underlying the varied levels of distress found in this study, dependent on stage of deployment and other military lifestyle factors, and the implications of these.

Results indicating incongruence between significantly high levels of distress and low treatment seeking may also be worth exploring; barriers to seeking help have been identified within the US and Japanese literature and include stigma related to disclosure of mental health, concerns that this will in some way impact on their military partner's career and/or work, and lack of recognition, availability and accessibility in services (Lewy, Oliver, & McFarland, 2014). Non-treatment seeking or why individuals are not coming to the attention of services may also be related to resilience, or perceived resilience; it could be that partners feel like they have no choice but to cope which may explain the elevated levels of distress but it could also be that military partners do not want professional help, may not have time to seek help or it could quite possibly be the result of response bias through the use of self-report measures.

On a final note, this research excluded partners who were also serving in the military; it may be of importance to explore this population further in similar ways (though this arguably veers into the realm of the support available from the military rather than NHS services). It is hoped this research might also prompt reflections on other at-risk of mental health groups associated with the military and deployment, such as parents of single military personnel.

As the evidence base currently stands, with the inclusion of this study, the results provide preliminary support for more specialist and readily accessible mental health services for UK military partners, and quite possibly other populations who face regular separations.

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Extended Paper

Extended Background

7. Introduction

There were 159,630 serving service personnel in the UK forces in April 2014: NAVY, ARMY and Royal Air Force (RAF; Ministry of Defence, 2014). The same report suggests that 69,580 of those are married or in a civil partnership. The accuracy of such figures is questionable when considering those in a relationship and cohabiting, so this number is likely to be significantly higher when considering relationships outside of marriage.

7.1 Psychological Impact of Military Lifestyle

Mental or psychological wellbeing is not only influenced by individual attributes but also by the socioeconomic and broader environment in which individuals find themselves (World Health Organization; WHO, 2012). The WHO (2012) has highlighted major stressors that significantly increase the risk of mental health; unemployment, exclusion from social and local community, discrimination, societal beliefs, and lack of opportunity to maintain close familial and friend relationships. These stressors are likely to be common occurrences for military partners as a result of re-locations (either co-located or separately), or as a result of limited time to dedicate to creating and maintaining opportunities; including when their military partner is away/deployed. The impact of service life is consistently found to be in the top two causes of dissatisfaction in military personnel and their partners (Ministry of Defence, 2016a).

It could be argued that Military partners are somewhat different to other populations who experience regular separations from their partner, for example, oil rig workers, those imprisoned, or even humanitarian workers. In 1970, however, an independent report was published commissioned by the government which introduced the ‘X-Factor’; an addition to basic military pay to recognise the “special conditions of military life, as compared with civilian employment” (Incomes Data Services, 2014, p. 1).

Within this report, some key differences include: 1) Turbulence: frequent changes in the type and location of work on personnel and their families. This includes access to education, NHS healthcare, credit ratings and house buying. 2) Spouse/partner employment: the report recognises the difficulties spouses and partners face in finding employment, particularly through enforced relocations on promotion, and the impact on earnings as a result. 3) Separation from family and home and 4) Hours of work: Military personnel are employed on a 24-hour duty contract and so partners are more likely to face uncertainty of separation (of which will be explored further in the extended section). In addition, military partners are more likely to experience extended periods of time within each stage of separation but are also more likely to face short-term separation even when military partners are not deployed long-term, and these are often unpredictable. Deployments and separations are not chosen, are inflexible, and are not conducive to maintaining communication with those left behind. Thus, creating other instances of difference between professions whereby separation is the result of a choice (humanitarian work). The military are employed to protect the security, independence and interests of the country, and so partners are increasingly more likely to have information withheld from them regarding the location of the deployment and the locations of which can have inherent danger to life.

The unknown, the uncertainty, lack of flexibility and predictability are therefore likely to distinguish the experiences of military partners to others who face separation, and will not be explored further.

7.1.2 Unemployment

The Tri-Service Families Continuous Attitude Survey (Ministry of Defence, 2016b) reported that 75% of their sample was employed though the majority reported difficulties in finding their jobs. Gaining meaningful employment is likely to be difficult for military partners due to a life of uncertainty, re-locations, partner deployments and associated childcare costs (Army Families Federation, 2016). The increased likelihood and perceptions of discrimination in employment may exist; the understanding that military partners may move

frequently and the frequent absence of partners (leading to views about a person's employability characteristics e.g. reliability) may create fears for those seeking and gaining employment and for employers alike (Armed Forces Covenant, 2017; Army Families Federation, 2016; RAF Families Federation, 2013). Conversely, if employment is achieved, then difficulties in maintaining employment is likely to arise when a partner/parent is away; availability and cost of childcare and/or meeting the requirements of contractual agreements such as hours of work required. Unemployment, and in some cases employment, is likely to lead to financial difficulties, also known to impact negatively on mental health (WHO, 2012). The significance of the difficulties faced by military partners is reflected in the development of agencies and charities aimed specifically at helping military partners with recruitment and employment (Armed Forces Covenant, 2017; Recruit for Spouses, 2017). The extent of unemployment difficulties has also led to question whether marriage (to a military person) should be a protected characteristic under the 2010 Equality Act (Army Families Federation, 2016) and the Armed Forces Continuous Attitude Survey consistently finds the impact of service life on the careers of spouses and civil partners as the other 'top two' causes of dissatisfaction in military personnel and their partners (Ministry of Defence, 2016b).

7.1.3 Discrimination, Stigma and Society

As is similar for gender and age, discrimination towards a particular group based on socio-demographic characteristics framed by social norms and societal beliefs increase that group's exposure to exclusion and economic adversity, which in turn places them at higher risk of developing mental health difficulties (World Health Organization, 2012).

Discrimination and social norms might be particularly relevant for male partners of military personnel. Historically and still quite evident within academia and society, language used to describe military partners is mainly "military wives"; this, alongside dominant discourses of masculine gender roles and the stigma that seemingly still exists around mental health, is highly likely to reinforce

distress and create significant barriers for this population; particularly in relation to seeking support during deployments and times of separation (Diaz, 2015).

Other hypothesised attitudes military partners may face include the choice they had in developing a relationship and/or relocating with their military counterpart; facing such internal and/or external beliefs are likely to be unhelpful during times of separation as they may serve to reinforce feelings of isolation and loneliness, which in turn increase the risk of common mental health problems and minimise treatment seeking behaviours (Runge, Waller, MacKenzie, McGuire, & Hunt, 2014).

Disclosure of mental health in military partners has been associated with worries around the beliefs, attitudes and response of the military but also the impact it may have on their military counterparts' career (Eaton et al., 2008). The stigma of mental health and the perceived stance of the military culture (likely in response to historical contexts) is proposed as a further barrier to treatment seeking in military partners (Murphy & Busuttil, 2014) of which again, leads to the risk of exacerbated mental health problems.

7.1.4 Identity

Another unique challenge arguably faced by military partners is the regular adjustment of roles and identity in response to regular separations and base. Common adaptations reported by US military partners include, becoming both parents when one is away and accepting sole responsibility for the home and finances (Marnocha, 2012).

Self-identity is described as a mental representation of who we are and negative effects can occur when the addition of a new but not necessarily sought after identity happens (becoming both parents) or where there is a deletion of a previously valued identity (e.g. employment). Baumeister (1997) termed two types of identity crises; identity conflict and identity deficit, both of which may be pertinent for military partners. Identity conflict arises in response to aspects of our identity that are incompatible (Baumeister, 1997), for example,

this might be seen in women who want a career but also want to be the main caregiver for their child or partners who wish to locate with their military counterpart. Such conflicts are said to create feelings of stress, anxiety and guilt leading to significant mental health difficulties. Identity deficit arises in response to an inadequately formed or stable identity (Baumeister, 1997). Due to the regular separations and threats to identity, alongside the evidence to suggest increased mental health problems in the US (yet to be outlined), it may be hypothesised that military partners have been unable to develop such a sense of self since being part of a military culture, leading to limited decision making and vulnerabilities to mental health problems.

Regularity of role and identity challenges associated with mental health in military partners is yet to be established, though increased confusion and mental health difficulties around parental and partner roles and identities may be reinforced through the regular return and departure of military counterparts.

7.1.5 Uncertainty

The military lifestyle is known for its level of uncertainty (MacDermid & Riggs, 2014) and intolerance of this may lead to the onset of negative mental health problems (Dugas, Gosselin, & Ladouceur, 2001). Uncertain scenarios faced by military partners might include, but not limited to; a constant sense of being unsettled, never knowing where the next home will be, whether their relationship is certain, and when and where, a partner will be deployed. These uncertainties are likely to lead to increased worry, anxiety and depression (Dugas, Schwartz, & Francis, 2004).

There is some evidence to suggest that worry as a product of uncertainty, can serve as a protective factor at a metacognitive level; for example, thinking styles that refute or minimise the negative content of thoughts in order to view selves as coping with distressing past, current, and/or future experiences (Wells, 1995). For instance, “if I do/don’t think about something it is more/less likely to happen” or “I just get on with it”. Difficulties arise when attempts to control the content of thoughts are increased, likely through frequent exposure to

distressing experiences. Over extended periods of time, these meta-cognitions are said to become counterproductive and if relied upon may lead to more problematic worry, diminished cognitive control, cognitive disruption, negative affect and sensitivity to worry triggers (Wells, 1995). This is particularly relevant for military partners, based on factors previously explored, such as lack of opportunities for support and a possible sense of needing to “get on with it”, perceptions of societal and military related beliefs alongside the experiences of frequent separations and increased likelihood of frequent episodes of worry.

The impact of uncertainty in UK military partners and the function of their responses as either protective or risk factors are yet to be explored, though the research exploring the function of resilience outlined above, may provide some further clarity if applied to the challenges/benefits of a military lifestyle.

7.1.6 Separation

Throughout the exploration of the above major stressors, it appears that these are more likely to be exacerbated during times of separation. Military separations are often non-negotiable, enforced and at times unpredictable too (Dandeker, 2006; Jervis, 2011). So, while there are groups within society that may face similar difficulties, military partners are likely to face these on a much regular basis (every three years or sometimes more frequently as a result of promotions, detachments and deployments) and just in itself may bring lowered emotional and practical support as a result of limited communication, loneliness and increased worry. As highlighted in the journal paper literature review, the perceived impact military personnel have of those left behind significantly impacts on their ability to perform at work (Dandeker, 2006; Mulligan et al., 2012), so partners may resort to keeping difficulties to themselves placing themselves at risk of developing mental health problems, relationship difficulties and possibly experiencing other difficult emotions such as resentment and anger (Marnocha, 2012). Another of the main differences between the general population and a military partner sample is the experience of separation through deployment specifically. Deployment comes with unique connotations and implicit, and sometimes explicit (the media), discourses and narratives in

society, which are generally framed negatively e.g. war, dangerous, death (Hodges, 2013; King, 2012); deployment may therefore impact negatively on the perceptions of those left at home which are reinforced by societal views and likely leading to increased risk of exacerbated distress.
In considering the multiple factors likely to be experienced by military partners at any one time, military lifestyle characteristics are likely to contribute to mental health and psychological difficulties which impact on an individual's level of coping and achievements, which in turn serves to reinforce such difficulties; thus, creating a vicious cycle of difficult and stressful times in which military partners may find themselves. It is hypothesised that a number of UK military partners may have at some time and still do experience significant and exacerbated mental health difficulties through exposure to the military lifestyle, including separation, above what would be expected in the general population.

Separation due to deployment will now be explored in more depth to determine the extent these impact on those involved in the military and more specifically the mental health of military partners.

7.2 Deployment

7.2.1 Deployment and Military personnel

A plethora of research exists on the nature of military life and deployment on the increased risk of veterans (ex-serving) and currently serving personnel of the Armed Forces (UK and US) developing mental health problems (Samele, 2013). The increased risk of developing PTSD (Post Traumatic Stress Disorder) in relation to deployment is also well documented in the literature (Kessler, Sonnega, Bromet, Hughes, & Nelson, 1995). The prevalence of PTSD is lower in UK military personnel (4-6%) when compared to US samples (8-15%)(Sundin, Fear, Iversen, Rona, & Wessely, 2010), though it was found that when UK and US samples were matched on random samples, prevalence's were similar. Methodological differences therefore make for difficult interpretation of PTSD prevalence (Sundin et al., 2010). Furthermore, high rates of violence, substance misuse and self-harm has been associated with return

from deployment (Macmanus et al., 2014). It could be argued that military partners develop difficulties in reaction to their military partners' problems, rather than deployment itself. Iversen & Greenberg, (2009), however, found that the majority of serving and ex-service personnel have relatively good mental health with broadly similar rates to the general population.

7.2.2 Children and Families

A deployed parent has been found to increase emotional and behavioural problems in children (White, Burgh, Fear, & Iversen, 2011) and negative mental health difficulties of their remaining parent has been identified as a significant risk factor in the development of these problems (Taft, Street, Marshall, Dowdall, & Riggs, 2007). An increase in number and length of deployments has also been found to impact negatively on the severity of mental health problems in children (Chandra & London, 2013; Lester et al., 2012; White et al., 2011). This group of research is based primarily on US samples. It also has particular emphasis on the emotional cycle of deployment and how lone parents can best support their child, rather than how they can support themselves (Bateman, 2009) but highlights important challenges military partners are likely to face and the reactions to these.

7.3 Emotional Cycle of Deployment

The emotional cycle of deployment was developed by Pincus, House, Christenson, and Adler, (2001) in response to children and families of US military personnel who experience deployments six months or greater. The cycle is divided into five distinct phases based on time and include pre-deployment, during deployment, sustainment, re-deployment and post-deployment (See Figure 1). Each stage has been characterised by specific challenges and emotional difficulties faced by military personnel, military partners and their children which has been outlined by Pincus et al., (2001) and more recently by Esposito-Smythers et al., (2011), and is based on available literature at the time, experience, news stories and observations.

7.3.1 Stage One: Pre-Deployment

Pincus et al., (2001) defines the pre-deployment stage as beginning with the warning order for the deployment and ending when the military personnel depart their home station. This stage is variable in length and may last days to over a year.

Military partners are said to alternate between denial, including shock and disbelief (Esposito-Smythers et al., 2011), and anticipation of loss. But as the military personnel continue to prepare, including time away from home for training, emotional and physical distance ensues and military partners report their military counterpart as already “psychologically deployed” (MacIntosh, 1968; Pincus et al., 2001).

Pincus et al., (2001) reports the following: As the reality of deployment is comprehended, military families attempt to get their affairs in order usually culminating in long to-do lists, some of which might include: home, security, car, finances, tax, child care plans and legal wills. Adopting sole responsibility for the military partner begins and is usually responded to with stress, confusion and worry. During this time, it is thought many couples strive for increased intimacy and perfect occasions (e.g. Christmas, holidays, anniversaries) though ambivalence about sexual relations is said to exist in response to knowing they will be apart for a significant amount of time but very aware of the negative feelings they are experiencing towards their military counterpart. Worries about fidelity or marital integrity are evident, as well as fears for their children’s ability to cope, though in this busy and tumultuous stage of deployment, these may go unspoken and high expectations often fall short.

Pincus et al., (2001) found that a common occurrence just prior to deployment is a significant argument between partners, underpinned by anger and resentment in the military partner, likely caused by the stress of the pending separation and in response to the pain and loss of saying goodbye. It is suggested that this argument in couples with a long history are usually not taken too seriously and readily attributed to the experience of deployment and military life. On the other hand, this argument is said to lead to more serious

consequences for younger couples who are experiencing separation for the first time; fears that the relationship has broken down may lead to extreme anxiety for both involved.

Unresolved concerns are said to have potentially devastating consequences, in response to the distress caused; for military personnel, stress can lead to preoccupation, distractibility, and ineffectiveness and in turn the increased risk of mistakes and serious incidents. For military partners, distress can lead to interference with completing basic routines, concentration and attending to the needs of their children; this is particularly concerning for those who may have children with learning disabilities (Pincus et al., 2001). These worries, fears and arguments between parents is likely to exacerbate children's fears (being cared for or the return of their parent) and adverse reactions in children can include regressive behaviours, tantrums, apathy and inconsolable crying. If these behaviours are not responded to, a downward spiral is said to ensure, in which both partners become more upset and stressed at the prospect of separation (Pincus et al., 2001).

It is recommended by Pincus et al., (2001) that this stage is an opportunity to detail expectations of each other during the deployment: including the ability to make independent decisions, budgeting, possible contact with others (fidelity), going out with friends, child rearing and where possible contact between each other. Clear communication and resolution of marital disagreements face-to-face is said to reduce the possibility of hurt and disappointment later in the deployment.

7.3.2 Stage Two: Deployment

Pincus et al., (2001) defines the deployment stage as the period from when the military personnel depart their home base through to the end of the first month of deployment.

The authors suggest that the deployment stage is characterised by mixed emotions; some may feel disorientated and overwhelmed with a sense of loss,

grief and fear whereas some may experience relief that they no longer need to appear strong or brave. Residual numbness, sadness, anger and feeling alone and abandoned may be common and 'what if' worries and anxiety may lead to difficulties sleeping. This stage is highlighted as an unpleasant and disorganising experience for many military partners, especially as role-reversals are played out and the actual/perceived strain and overload of the responsibility of this.

Communication with partners at home has been found to boost morale in those deployed, though the experiences of military partners is variable. Re-connection has been described as a stabilising experience for military partners, though it may be several weeks before their deployed partner is able to make their first call home. In addition, phone-calls provide immediacy and proximity to unsettling events at home or where their military counterpart is deployed and for those who may have "bad" phone calls, the risk of exacerbating stress increases. The authors suggest it is virtually impossible to disguise negative feelings leading to helplessness in either partner or even the possibility of jealousy towards the individual(s) whom either might rely or confide during the separation. Although most partners report the ability to stay in contact, especially during key milestones helps them to cope, the above situations can add to the stress and uncertainty that was evident pre-deployment.

7.3.3 Stage Three: Sustainment

Pincus et al., (2001) defines the sustainment stage as the period from the end of the first month through to the 18th month of deployment (or up to the beginning of the last month of deployment).

This stage is purported to be a time of establishing new sources of support and new routines. As challenges arise, the authors suggest military partners learn of their ability to cope, make important decisions independently and have reported feeling more confident and in control.

Some of the challenges that military partners may face include lack of consistent contact, anger and resentment if expectations regarding frequency of calls is not met, frustrations that any contact must be initiated by their deployed partner and in some cases dealing with rumours as a result of more accessible communication e.g. fidelity, accidents or injuries and/or changes in return dates. There is also an increased risk of distortion or misperception in non face-to-face contact and inability to have physical distance (Pincus et al., 2001).

The authors suggest a child's response to this stage varies dependent on developmental age though regardless of age, children will generally respond to how their parent who remains at home is coping. The authors highlight common behaviours and moods present in children during deployment and they suggest that infants through to school age are likely to be irritable and sad and present with refusal to eat (less than one year old), cry and have tantrums (one to three years old), present with regressive behaviours such as being clingy and potty accidents (three to six years old) and also present as 'whiney' (more likely in those aged six to twelve years old. Teenagers (twelve to eighteen years old) are said to isolate themselves more and possibly resort to drugs in response to anger and apathy. On the whole, the authors suggest children of deployed personnel are more vulnerable to psychiatric hospitalisation, though the vast majority are able to successfully negotiate this sustainment stage.

7.3.4 Stage Four: Re-Deployment

Pincus et al., (2001) defines this stage as the month before the deployed personnel is scheduled to return home.

The authors characterise this stage by intense anticipation, and like the deployment stage, a range of conflicting and sometimes alternating emotions. On one hand, there is excitement for the return of their deployed partner but on the other there may be apprehension. Although the separation is almost over, difficulties in decision-making may be restored, generally in response to increased attention to how their returning partner may respond. Other concerns include whether their relationship will be the same before the deployment,

whether they will get along, whether feelings will have changed and whether independence will be quashed. A surge of energy also characterises this stage in attempts to complete “to-do’s” before their partner returns and the authors suggest high expectations are inevitable at this stage.

7.3.5 Stage Five: Post-Deployment

Pincus et al., (2001) defines this stage as the period beginning with the arrival of the deployed personnel back at the home station and as with the pre-deployment stage is variable in how long this stage lasts; typically, this stage can last approximately three to six months.

The authors highlight this as a time of joy for some but for others this can be a frustrating and upsetting experience. It is acknowledged that the return date may have changed, sometimes repeatedly, and sometimes the return journey may be spread over a period of days. Due to uncertainties, partners may not be there for their partner’s arrival home leading to disappointment. A honeymoon period is said to follow, whereby couples reunite physically but not necessarily emotionally. Some partners have expressed awkwardness in response to re-uniting in addition to excitement though some partners require time in order to reconnect emotionally before sexual intimacy is explored.

Military personnel are said to attempt to reassert their role as a family member during this stage, which has said to create tensions as things will have changed in their absence; partners are more autonomous, children will have grown and priorities are likely to be different. Military personnel, however, are likely to expect everything to be the same as before the deployment. In response to this, military partners have reported a lost sense of independence. Resentment at being “abandoned” continues, a sense that they have suffered more during the deployment as their military counterpart has only had themselves to look after. Irritability ensues at having their partner home, which is not in line with the negotiated routines developed while they were away; they become to desire their own space though roles and routines require negotiation and re-

establishment. The re-negotiation of roles, family roles, responsibilities and schedules creates difficulties in re-adjustment (Pincus et al., 2001).

Pincus et al., (2001) highlights the reunion with children as a challenge during this stage, and feelings and responses are again dependent on their developmental level. Babies (less than one year old) are less likely to recognise the returned parent which may lead to crying when being held. Toddlers (aged one to three years old) are said to be slow in warming to their returned parent. Pre-school children (aged three to six years old) may feel guilt and scared following the separation. School aged children (aged six to twelve years old) may seek lots of attention and teenagers (twelve to eighteen years old) may be moodier and appear not to care. In addition, children are said to remain loyal to the parent that remained in their life and are unlikely to respond to discipline from the returned parent and may also be fearful of the parents return. It is said that children may experience extreme anxiety up to a year later, particularly in response to the increased risk of re-separation. There is increased risk of alienating children during this stage and the returned parent may feel hurt in response to their reception from children and partners. The post-deployment stage is said to require careful reintegration to avoid exacerbation of emotional and physical difficulties in military families.

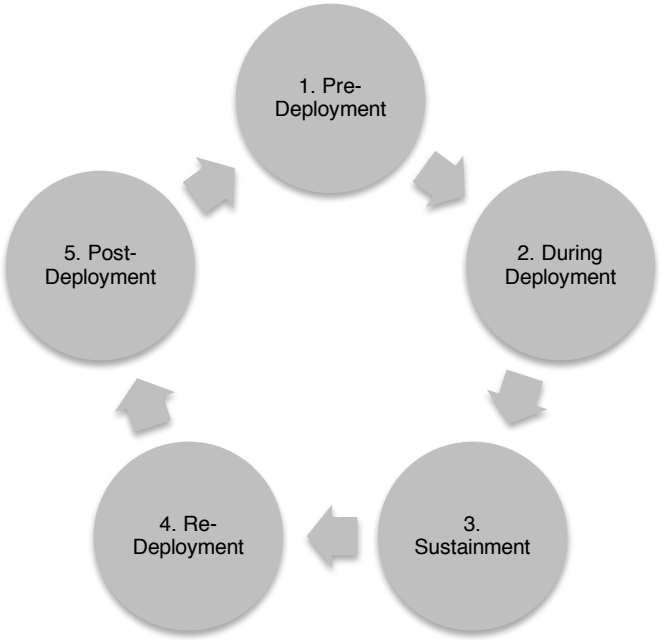


Figure 1 Emotional Cycle of Deployment.

7.3.6 Summation

The authors acknowledge that deployment as a whole have resulted in much stronger relationships in military families, and although with limited focus, the positive impact on children can include fostering maturity, independence, flexibility, skills for adaptation to change as well as emotional growth and insight. This cycle is limited in understanding the response of military families who do not fit the traditional US military family, for example, those in same sex relationships and those with children who have learning disabilities.

The predominantly US based research outlined so far suggests that deployment has an impact on the mental health of military personnel, the mental health of children and the mental health of military partners though there is no UK research exploring the mental health of UK military partners. A literature review of published research was performed paralleling the stages of deployment to determine the impact of deployment on the mental health of military partners as adjunct to the journal paper.

7.4 Military Partners: During Deployment

Though the majority of research focuses on this stage of deployment, it is difficult to generalise these findings to the other stages associated with deployment and the act of deployment is likely to be appraised and experienced differently in the UK compared to the US; for example, US deployments may last 12 months or more compared to 6 months in the UK.

Mulligan et al (2011) found that the perceptions military personnel had of the difficulties at home and the perceived level of support (military and interpersonal) that their partners were receiving for these difficulties, significantly and negatively impacted on their mental health during deployment. Furthermore, research has found that if non-military partners are unhappy (wives in this study) it is likely to pre-occupy deployed personnel and also impact on retention within the forces (Dandeker et al, 2009).

The evidence exploring depression in military partner samples varies in outcome; Asbury and Martin, (2012) found no significant difference between partners of deployed military personnel and partners of a civilian population and scores for depression were found to be low in both groups. Although not directly reported in text, Skomorovsky, (2014) found no suggestion of depression in their sample of military partners. On the other hand, Faulk, Gloria, Cance, and Steinhardt, (2012) found that 39% of their sample reported a moderately severe level of depressive symptoms; however, wives who had experienced more deployments had lower levels of depression. In addition, Mansfield et al., (2010) investigated medical records and found that partners of deployed personnel received more diagnoses of depressive disorder than those whose partners weren't deployed and that rates of depression increased when length of deployment exceeded 11 months.

Burton, Farley, and Rhea, (2009) also found partners of deployed personnel had significantly higher perceived stress scores than partners of non-deployed personnel. Similarly, Mansfield et al., (2010) and Skomorovsky, (2014) found significantly higher rates of acute stress disorders and deployment stress amongst partners of deployed personnel compared to partners of non-deployed personnel. It was found that increased perceived stress scores were positively correlated with clinical levels of depression (Faulk et al., 2012) and higher levels of stress were found in younger (under 30) military partners (Rosen, 1995).

Asbury & Martin, (2012) found no significant difference between partners of deployed military personnel and partners of civilians on levels of anxiety. Although no difference was observed between the two groups, mean scores for the deployed group were still suggestive of moderate anxiety. Other studies that have explored anxiety in relation to deployment have found that anxiety is more prevalent for partners of deployed personnel; more diagnosis of anxiety related disorders (Mansfield et al., 2010; Wexler & McGrath, 1991) and screening positive for generalised anxiety disorder (Eaton et al., 2008) has been found and these studies also found that as deployment length increased, anxiety also increased (e.g. 22% just deployed compared to 77% at 12 months).

Some of the research exploring the impact of deployment, has not conceptualised “psychological difficulties” but have reported on domains such as psychological distress, strain, health and/or wellbeing (Andres, Moelker, & Soeters, 2012; Everson, Herzog, Figley, & Whitworth, 2014; Rosen, Westhuis, & Teitelbaum, 1994; Wexler & McGrath, 1991). Skomorovsky, (2014) reported problems with psychological health during deployment, though specific areas were not reported. Similarly, Wexler and McGrath, (1991) found feelings of sadness (65%) anger (37%) and worry (74%) in partners during deployment (1991).

In relation to demographics, Rosen et al., (1994) and Wexler and McGrath, (1991) found younger samples were at increased risk of low levels of psychological wellbeing and significant worry more likely to impact on their life. Everson et al., (2014) also found that partners of lower ranking personnel experienced greater levels of personnel distress including irritability, worry, depression and anxiety. These were, however, not distinguished between in the reporting of results. As psychological distress has not been conceptualised or separated out according to sub-scales, it is difficult to decipher results.

Other research has explored the impact of deployment on physical health concerns. Burton et al., (2009) defined somatization as “bodily symptoms for which no organic causes are found” and they found that somatization scores in partners of deployed personnel were significantly higher than those in non-deployed partners. Wexler and McGrath, (1991) found that the most distressing physical symptom reported by partners of deployed personnel was insomnia (48%). Sleep related disorders among partners of deployed personnel has also been reported by Mansfield et al., (2010). Wexler and McGrath, (1991) went on to identify a significant number of partners that reported headaches (43%), eating too little (44%) and distractibility (42%). Other symptoms reported (albeit to a lesser degree) included stomach-aches (28%), sleeping too much (11%), lack of concentration (38%), rashes/skin problems (11%), nightmares (18%) and more colds than usual (7%).

7.4.1 During Deployment Comparisons

Specifically, anxiety (Eaton et al., 2008) and depression (Beckman, Marsella, & Finney, 1979; Rosen, 1995) have been found highest, and at clinical levels, during deployment compared to post deployment, and these levels have paralleled returning combat soldiers (Eaton et al., 2008). Levels of anxiety and depression have, however, been found to significantly decrease at the post-deployment stage (Beckman et al., 1979; Eaton et al., 2008). In relation to stress, Andres et al., (2012) found that mean scores were highest mid-way through deployment compared to one month prior and three months post deployment and mean scores for 'psychological distress' (worry, strain, unhappiness or distress) were highest mid-way through deployment when compared to pre and post deployment.

7.5 Military Partners: Post Deployment

As noted above, anxiety and depression have been found to decrease at the post-deployment stage (Beckman et al., 1979; Eaton et al., 2008). In terms of prevalence, there appears to be a correlation between longer lengths of deployment and increased level of mental health problems post-deployment (Buckman et al., 2010; Rona et al., 2007; SteelFisher, Zaslavsky, & Blendon, 2008).

Literature has explored unhelpful coping behaviours that are likely to be adopted by US military partners in response to deployment and evidence has shown an increase in drug (Ahmadi & Green, 2011; Blank, Adams, Kittelson, Connors, & Padden, 2012) and alcohol misuse (Erbes, Kramer, Arbisi, DeGarmo, & Polusny, 2017). Of interest, and somewhat applicable to British Armed Forces, Asbury and Martin, (2012) have suggested that partners are more likely to cope during US deployments of 6 months or less.

There is some UK research that has investigated the impact of deployment on interpersonal relationships between military personnel and their partners, mainly from a post-deployment perspective. Rowe, Murphy, Wessely, and Fear, (2013)

found that mental health difficulties of military personnel had a negative impact on relationship satisfaction. Keeling, Wessely, Dandeker, Jones, and Fear, (2015) found that deploying for more than 13 months in three years, being in an unmarried relationship and limited support for and from partners, were all indicated in lower relationship satisfaction post-deployment. The focus of both these studies was from a military personnel perspective rather than those left at home and so appears unknown what the factors are, from a military partner perspective, that are associated with lowered relationship satisfaction. The remaining research in this area is again dominated by US samples (e.g. Allen, Rhoades, Stanley, & Markman, 2010) and appears conflicting as to whether deployment does have an impact on relationships (White et al., 2011). Samples recruited are limited to married female partners of male serving personnel who are keener to salvage their relationship (due to sampling from marriage workshops).

Other research has explored the impact of PTSD in military personnel in response to deployments, and how this impacts on those left at home; Lyons, (2009) conducted a review which highlighted combat exposure in families during deployments is mediated by PTSD, particularly numbing/avoidant symptoms. The increased rates of substance misuse, high rates of violence and self-harm in returning military personnel, highlighted previously, is also likely to impact on relationship satisfaction and possibly in turn, mental health difficulties (Macmanus et al., 2014).

There have been some indications that partners may experience traumatic stress symptoms, such as avoidance and increased arousal, in response to increased trauma experiences related to deployment, in returned personnel (Bride & Figley, 2015; Goff, Crow, Reisbig, & Hamilton, 2009; Mccormack, Hagger, & Joseph, 2010). Dirkzwager, Bramsen, Adèr, and van der Ploeg, (2005) investigated secondary traumatization in military partners of returned peacekeeping soldiers with a diagnosis of PTSD and found they reported more sleep and somatic problems, more negative support, and less relationship satisfaction compared to those returned without a diagnosis of PTSD. Traumatic stress-symptoms in partners were reportedly similar to a diagnosis of PTSD in

their veteran counterpart, and include re-experiencing, avoidance, emotional numbness and hyperarousal (Bjornestad, Schweinle, & Elhai, 2014). Though this study found a prevalence rate of 5% in civilian partners who reported experiencing traumatic stress symptoms themselves, only one of those spouses would actually meet criteria for a diagnosis. The results of this study therefore suggest that other variables may contribute to secondary traumatic symptoms aside from the symptoms in returning personnel.

7.6 Clinical Psychology and Depression

Depression is characterised by persistent low mood, absence of positive affect and presents as a range of associated emotional, physical, cognitive and behavioural symptoms that co-occur which often impairs day-to-day functioning (American Psychiatric Association, 2017). Depressed individuals often report changes to sleep patterns, loss of energy, suicidal thoughts and feelings of worthlessness and hopelessness about the future (Westbrook, Kennerley, & Kirk, 2011).

Beck, Rush, Shaw, and Emery's, (1979) influential cognitive model of depression states that unhelpful thoughts cluster to form negative patterns in relation to the self, others and the world, and the future. Largely impacted on through Beck's work, Cognitive Behavioural Therapy (CBT) has become the leading treatment approach for depression (National Institute for Health and Care Excellence; NICE, 2016).

Central to CBT is that thoughts, appraisals and beliefs about ourselves, others and the situations we encounter, create meaning that then shapes the way we feel and behave (Westbrook et al., 2011). The CBT model proposes that we develop core beliefs and assumptions about the world in response to experience. These beliefs and assumptions allow us to navigate through life with minimal difficulties and we are able to function with a combination of functional and dysfunctional beliefs. Problems occur when we experience a 'critical incident', which infringes our core beliefs and assumptions leading to a silencing of functional beliefs.

The experience of the military lifestyle may be applied to a CBT model. Unemployment, discrimination, isolation and separation as a result of having a military partner may symbolise critical incidences. Such critical incidents are also likely to re-occur. Each of these critical triggers are likely to come with widely held beliefs and expectations which are likely to impact on appraisals about the self, leading to feelings of depression and in turn increased likelihood of behaviours serving to reinforce such distress.

7.7 Clinical Psychology and Anxiety

The anxiety response is a normal reaction to threat. When a threat is identified, the body automatically produces adrenaline in order to prepare the body for a 'fight', 'flight' or 'freeze' response. Difficulties arise when threat systems are activated but in response to a non-threatening situation or when individuals are not able to cope with the anxiety response. The military lifestyle is likely to develop and breed anxiety among military partners, given the levels of uncertainty, perceived and actual dangerousness and increased separations.

7.8 Clinical Psychology and Stress

According to Lazarus & Folkman, (1986) and more recently, Folkman, (2013) stress and coping go hand-in-hand to form a single concept. It is argued that coping is integral in the process of emotional arousal whereby an individual identifies a problem and then evaluates their response to this. The extent of psychological distress is determined through appraisals of the significance of an event on personal well-being (primary appraisal), how they might subsequently cope (secondary appraisal) alongside the demands of the event (cognitively and behaviourally). In light of this view, stress is seen as relational and a 'transaction' between an individual and specific parts of their environment deemed significant enough to impact on wellbeing and when demands of the situation exceed the coping resources available to them at that time (Folkman, 2013; R. S. Lazarus & Folkman, 1986).

7.9 Clinical Psychology and Posttraumatic Stress / Growth

Symptoms and behaviours of patients diagnosed with PTSD vary considerably (NICE, 2005). The psychological diagnosis of PTSD is often complicated by co-morbid mental health difficulties including mood disorders, personality difficulties, anxiety, substance misuse and behaviours related to anger and aggression (Keane & Kaloupek, 1997). In addition, the impact of PTSD also leads to poor social and occupational functioning, detachment from friends, family and society as well as interpersonal conflicts linked to guilt and shame, all of which are likely to reinforce feelings of isolation (Marmar et al., 2015).

Persistent PTSD symptoms occur as a result of a perceived and current threat whereby negative characteristics and appraisals of the traumatic memory maintain a sense of threat, either physical or psychological, and either external or internal. Emotional responses (such as guilt, shame, responsibility) are also thought to be connected to individual appraisals. Strategies used to cope with such symptoms generally serve to maintain the problem through prevention of change in meaning and structure of the memory. Avoidance is the most common response and trauma memories are usually re-experienced as if it was happening again, as if it were frozen in time, without updates from new information, and are usually recalled involuntary.

For this sample, secondary traumatic stress or vicarious trauma is defined as a cumulative transformative effect through hearing and visualising others' first-hand traumatic experiences, though has typically been linked to therapists' response to working with patients who have experienced trauma (Saakvitne, 2002). Accordingly, individuals may find themselves re-experiencing either their own personal traumas, or notice an increase in negative arousals and avoidance related to the indirect traumas (The National Traumatic Stress Network, 2017). Traumatic stress may impact negatively on memory, perception, sense of self-efficacy, lowered resource ability and disruption to perceptions of safety, trust and independence (The National Traumatic Stress Network, 2017). In considering the above, specifically for military partners who may re-experience trauma from their returning partners and more likely on a cyclical basis based on stage of deployment, it could be argued that

psychological distress is likely to be exacerbated.

More recently, there has been increasing interest in the development of Posttraumatic Growth (PTG) in response to trauma, and may be of relevance in applying to military partners. PTG is the positive change individuals might experience in response to trauma which may contain elements of suffering and loss (Calhoun & Tedeschi, 2014). The authors suggest that personal strength, new possibilities, relations to others, appreciation of life and spiritual changes are the broad categories of how growth can be seen, but that these are not necessarily correlated with low levels of distress (Calhoun & Tedeschi, 2014). The process of PTG is said to involve rumination. Specifically, research has shown that greater amounts of growth are associated with greater levels of stress in response to the trauma (Joseph & Linley, 2012; Weiss, 2004) and it must have presented with a significant degree of threat in order for growth to emerge, though it remains uncertain what the extent of the threshold for cognitive disruption/growth might be (Calhoun & Tedeschi, 2014). In addition, preparedness to resist subsequent traumas is thought to be born out of personal strength and a changed philosophy of life following initial trauma and a revised assumptive world allow anxieties to be relieved. This might be particularly evident for military partners given their increased exposure to separation and adjustment to threats of danger and worry for their military counterpart. The cultural context has also been identified as an important factor in the development of PTG. The model suggests that the ability to engage in disclosures that contain themes of growth in response to trauma encourages the development of PTG (Calhoun & Tedeschi, 2014), though for military partners this factor is much more likely to be a challenge; particularly when their military counterpart is away, or if they live far from family and friends. The increasing support for the development of PTG might be of interest in relation to the mental health of military partners, particularly where distress is reported.

7.10 Theory

7.10.1 Attachment Theory

The theory of attachment was originally developed by Bowlby, (1969) who was interested in the intense distress observed in infants separated from their

parents. Bowlby, (1969) highlighted that infants would go to great lengths to prevent separation from a parent or to re-establish closeness to a missing parent. This led to the understanding of these behaviours as adaptive responses to separation from a primary attachment figure, given they are unable to feed and protect themselves. An attachment behavioural system was postulated which is said to regulate the proximity to an attachment figure and of which essentially asks, “is my attachment figure close, accessible and attentive, or not?”. If the infant perceives the former, the infant feels loved, secure and confident to explore the world around, though if the infant perceives the latter, the infant will experience anxiety leading to searching, vocal or isolative behaviours until proximity is re-established or the child ‘wears down’ (which Bowlby suggests leads to profound despair and depression). Ainsworth & Bell, (1970) termed these attachment patterns; secure, avoidant and anxious attachment styles. Bowlby, (1969) asserts that these early relationships become the template (internal working models) for ways of relating and reacting in future relationships. Theorists state that early attachment experiences also shapes the development of personality, adaptive capacity as well as vulnerability to and resistance against particular forms of pathology (Malekpour, 2007), therefore, individual differences may show different levels of risk to distress i.e. those that have secure compared to insecure attachment styles.

This theory has been applied to romantic relationships and there is evidence to suggest that behaviours evident in infant attachment relationships can also be observed in adult romantic relationships (Fraley & Shaver, 2000; Hazan & Shaver, 1987). The authors propose the same behavioural attachment system in adults and partners, found in infants and caregivers, and share similar features of proximal safety, closeness, intimacy and insecurities when the other is not around. Deployments can be argued to reflect the strange situation (initial separation, threat and reunion) (Ainsworth & Bell, 1970). In the case of military partners though, separations can be unpredictable and occur with little notice. This, in addition to a partner’s unpredictable availability and responsiveness whilst deployed, is likely to create relational difficulties and in turn emotional and behavioural responses that have been previously outlined in the literature.

Some researchers have suggested that adults do not hold a single working model that they apply to all relationships (Pietromonaco & Barrett, 2000; Simpson & Rholes, 2002). Instead it is hypothesised that on one level they have a set of rules and assumptions about relationships in general but on another they hold certain information about specific relationships. Individuals are therefore thought to hold different internal working models for different relationships (Berry & Danquah, 2016). This might go in some way of explaining how such negative emotional and behavioural responses occur in military partners, even when secure attachments might be prevalent. The variability in attachment styles could also be argued as flexible dependent on stage of deployment, though this has not been fully explored.

7.10.2 Psychodynamic

Psychodynamic approaches to psychopathology are clinically derived, rooted in attachment and object relations theories, and are based mainly on the early work of Sigmund Freud between 1894 and 1923 which have been expanded upon and adapted by later theorists such as Anna Freud, David Malan and more recently Habib Davanloo. This group of theories suggest that unconscious feelings and impulses, and the adaptive nature defence mechanisms employed to keep these in the unconscious (inability to adapt or update such mechanisms according to situation or environment), contribute to the development and maintenance of psychological distress (Davanloo, 1978; Freud & Reich, 2011; Malan, 1995; Mikulincer & Shaver, 2009).

In applying object relations to current attachment trauma, such as aversive experiences between military couples previously outlined or unwanted separation through deployment, it is suggested a conflict of emotions towards a partner in the military, is likely to ensue e.g. rage, guilt, sadness, love. These conflictual emotions evoke intolerable anxiety which are to be avoided. Distress is said to result from employing defence mechanisms (ego) learnt in response to avoiding these painful conflicting demands on emotions (id), the conflict between these and actual desires, as well as the sense of right or wrong (super ego), otherwise known as the intra-psychic conflict.

Malan developed a triangular schematic way of demonstrating an individual's current and relational conflict (Malan, 1995) and may go in some way of exploring the range of emotions associated with stage of deployment previously outlined. The triangle of 'conflict' represents an internal struggle between a hidden desire/feeling and the inability to express such desires/feelings likely in response to a conflict with a different internal need/anxiety. This triangle can be applied to the findings of Pincus et al., (2001) highlighting common responses to each stage of deployment.

It could be hypothesised that military partners' ongoing experience of isolation and sacrifice of own needs already provides a basis for a resentful relationship with the military and their partner.

The reports of emotional and physical distance from their military counterpart alongside self-imposed rules of keeping emotions to themselves in order to protect their partner pre-deployment, is likely to reinforce a hidden desire of wanting to be cared for and wanting their needs to be met. In response to this "unacceptable" hidden desire, an "unacceptable" hidden emotion emerges (or re-emerges) such as sadness, anger and resentment. As these are both "unacceptable" because they love their partner and should be supporting them, anxiety, depression and possibly guilt develops. This approach may also go in some way of explaining the "common argument" previously highlighted by Pincus et al., (2001).

During the deployment, the relief reported by military partners is likely to further create negative emotions such as guilt in response thoughts of being a "bad" or "unfair" partner and they shouldn't feel such a way. It may also be that as increased responsibility, role-reversals, meeting the needs of children and feeling isolated and alone may continue to serve the underlying and "unacceptable" anger and resentment initially developed at the pre-deployment stage. This might also explain how phone calls, for some, are particularly aversive experiences; they may threat the underlying negative emotion being suppressed, especially if they are inconsistent, and so an increase in distress is likely to be seen. As the deployment stage nears, conflicting emotions are said

to increase; excitement and apprehension, though it is more likely that partners may feel “bad” or “unfair” for feeling worried about seeing their returning partner and so anxiety and distress will be reinforced. During the post-deployment stage, resentment is said to continue, particularly in response to being “abandoned” and the reassertion of the returning partner is said to create tension. Again, as these responses are likely to be difficult to acknowledge, anxiety, guilt, depression are likely to arise.

This approach suggests that in response to these underlying conflict and unacceptability of emotions and desires, military partners may adopt a number of different defence mechanisms in order to manage the rising anxiety/distress and ensure the hidden conflicts remain hidden. This leads to a lack of acknowledgement of the ‘hidden desire’ and recurrent use of unhelpful defences. It would seem that throughout the stages of deployment, military partners are likely to be employing defence strategies in attempts to suppress true feeling. Some defence mechanisms (Have-de Labije & Neborsky, 2012) might include reaction formation (acting in ways opposite to how they really feel i.e. putting the needs of others first, such as their partner due to deploy or children). Sublimation may also be adopted (channelling unacceptable feelings into positive actions and socially acceptable behaviour) as well as somatization (which might explain the previous research highlighting physical health problems in response to deployment), and pseudo-altruism (the discharge of unacceptable feelings through professed concern for others). More mature defences include humour which, although a healthier way of coping, may serve to maintain underlying emotions, only temporary alleviate anxiety, and in turn reinforce distress. The adoption of unhealthy defence mechanisms and the inability to update these according to stage of deployment, continue to maintain psychological distress.

Attachment and psychodynamic theories have a relational focus, and so limits the accountability of immediate and social factors that could also be important in the development and maintenance of mental health difficulties. There are other theories that might account for this including cognitive and behavioural, though

based on the purposes and focus of this research, interpersonal theories are mainly applicable.

7.10.3 Resilience and coping

Although research has not been conducted to explore the concept of resilience in relation to military partners and mental health, there may be some hypotheses to be made, in addition to defences as coping strategies, in response to findings of US literature.

Psychological resilience is defined as effective coping and/or swift recovery and flexible adaptation when faced with changing demands of loss, hardship or adversity (Lazarus, 1993; Tugade & Fredrickson, 2004). It is acknowledged that there is huge heterogeneity in people's responses to adversity. There is some evidence to suggest that while adversity can have a sensitizing effect and increase vulnerability, there is also the suggestion that adversity can develop resilience and growth (Rutten et al., 2013). Military partners' increased exposure to adverse events may manifest as socialisation to separation and with time, become a normalised way of living and leading to higher thresholds for negative mental health experiences. These thresholds, albeit extreme, might create emotional stability, resilience to this stability, and become more flexible to changing demands (Tugade & Fredrickson, 2004).

A recent review suggests the building blocks for resilience are the experience of positive emotion, secure attachment styles and having a purpose in life (Rutten et al., 2013). Fredrickson (2013) developed the 'broaden-and-build' theory of positive emotions. The theory purports that positive emotions are associated with cognitive and social benefits (Isen, Daubman, & Nowicki, 1998; Isen, 2008) and are associated with reducing the cardiovascular reactivity associated with negative emotions, such as anxiety (Fredrickson, Mancuso, Branigan, & Tugade, 2000; Fredrickson & Levenson, 1998).

The role of positive emotion might provide insight into the research so far discussed and how mental health is mediated according to stage of

deployment; the elevated levels of distress during deployment may be an increase in negative thoughts and emotions which lead to narrower momentary thought-to-action repertoires. Whereas, the need to support military counterparts during the pre- and post-deployment, resulting in the minimisation of such negative thoughts and feelings, may expand this range of cognitions leading to more resourceful behaviours and ability to regulate negative emotional experiences more effectively. Other positive thoughts that may enable the development of resilience, and in turn minimise the risk of mental health problems, might include positive connotations of being a military partner, such as being proud or patriotic. On the other hand, the role of positive thoughts may be changeable and in line with this meta-cognitive model, the process of attempting to reduce and minimise the content of negative thoughts might actually increase negative thoughts about not thinking negatively.

The second building block; purpose, could also be evident for military partners, particularly during the deployment stage. It could be argued that a military partners' purpose becomes important as they become the main caregiver for children, responsible for the home as well as ensuring home life is kept afloat while their military counterpart is away. So, although this may suggest military partners appear to have the foundations of helpful resilience in the face of adversity, conversely, it could explain how mental health difficulties develop; the limited choice in identity shifts may lead to resignation that this has to be their purpose, they have no choice but to be resilient, which may result in the non-treatment seeking among military partners previously highlighted.

Although the development and maintenance of resilience appears relevant, isolation and lack of social support (a risk factor for military partners' negative health and well-being), has been found to stump this growth (Ozbay et al., 2007). There appears to be a complex interplay of negative and potentially positive factors that influence the experience of a military lifestyle which is yet to be fully explored in order to understand. This model might not provide a full explanation as to the elevated levels of distress still found pre- and post-deployment in the US literature, but it may provide some evidence for the

dynamic process of resilience based on individual differences, and the positive implications of resilience building in those experiencing difficult mental health.

A combination of the theories outlined here and in the journal article, provide some credence in applying the outcomes of US literature, highlighting the prevalence of psychological distress, to a sample of UK military partners.

7.11 Aims

Previous research has shown that the attitudes and overall satisfaction of a military partner significantly influences retention within the armed forces (Dandeker et al., 2010; Dandeker, 2006; Weiss et al., 2003) and with increasing and ongoing demands of the armed forces, recognizing and intervening at stressors affecting all those involved is likely to contribute to a more effective Armed Force.

Individuals with a partner serving in the British Armed Forces would access the NHS in the same way as everyone else but is likely to be faced with a professional with limited understanding of their unique difficulties. If the deployment cycle is found by research to be related to distress, then the timing of interventions is likely to be important: unless military partners would be appropriate for the Improving Access to Psychological Therapies (IAPT) services, then usual NHS services tend to have long waiting lists for psychological therapies (Department of Health, 2014). Although evidence suggests that as time increases psychological health does not worsen but is maintained (Elliott & Brown, 2002), the cyclical nature of deployment and separation, the anticipation of strong emotional reactions, and the common occurrence of major stressors associated with the military lifestyle, may continue to serve, exacerbate and worsen mental health difficulties over time, unless military partners are prioritized for services.

The impact of mental health difficulties is also likely to go beyond those of the military partner and personnel; evidence highlights the importance of accessible support in response to psychological distress, particularly when considering the

financial implications on services (Mind, 2013). The developmental trajectory of distress, pre-and postnatally, and the increased risk of transmission, is also likely to impact on children cognitively and emotionally (Talge, Neal, & Glover, 2007) which in turn increases the risk developing a developmental pattern in response to mental health, and further strain long-term on services.

Current US literature has progressed to identifying barriers to mental health treatment, which includes a lack of knowledge of where to get help and an inability to find services that understands their specific needs (Lewy, Oliver, & McFarland, 2014). Previous psychological theory has also provided some insight into why military partners do not seek help. US research has identified these barriers as necessary to break in order to provide effective and quality care (Padden & Posey, 2013) and in Japan, it is suggested that intervention at the primary care level can effectively help partners cope with the impact of deployment (McNulty, 2003). If research highlights levels of distress in a sample of UK military partners, this is likely something to consider in light of the results and recommendations.

Finally, it is hoped that if military partners are found to experience distress in relation to the military lifestyle and deployment, that the Armed Forces Covenant will play a vital role in ensuring services meet the needs of this population. The Covenant, published by the UK government, states:

> "Families play a vital role in supporting the operational effectiveness of our Armed Forces. In return, the whole nation has a moral obligation to the members of the Naval Service, the Army and the Royal Air Force, together with their families. They deserve our respect and support, and fair treatment" (Taylor, 2011, p. 7).

8. Research Design and Method

8.1 Epistemology

Pragmatism has been termed the most recent preferred epistemological position for quantitative research methods with underpinning qualitative elements, but not so much as to be considered a mixed methods approach.

This preference is due to the philosophical, ontological and methodological limitations of the positivist and constructivist paradigms (Tashakkori & Teddlie, 1998). Traditionalists from opposing stances adopt singular methodology, however, this shift in paradigms has given rise to a debate on the compatibility and combination of both methodologies (Cook & Reichardt, 1979). This approach suggests it is not the philosophical position or assumptions about the nature of reality that are important but (loosely) the ability to answer a given research question coherently whilst acknowledging these underpinnings (Johnson & Onwuegbuzie, 2004). It could be described as a more sophisticated dialectic approach to research to compensate for weaknesses of a single methodology and increase strengths in combining complimentary data outcomes (Denscombe, 2008). A positivist epistemology posits that reality is stable which is observed and described from an objective viewpoint (Aliyu, Bello, Kasim, & Martin, 2014) but importantly for this research, the world is seen as deterministic and operated by laws of cause and effect, meaning the use of deductive reasoning can be used to postulate theories to be tested. Pragmatism was adopted for the purposes of data collection to provide the opportunity of more focussed and in-depth analysis, though positivist approaches were used for this particular data analysis due to the scope of a DClinPsy thesis.

8.2 Sample

8.2.1 Eligibility Criteria

Previous research has mainly recruited wives of military personnel so for this reason all partners have been included.

8.3 Recruitment

A prize draw to win one of four £25 Amazon vouchers was also offered to encourage participation in the survey.

8.4 Sample Size & Power

A power analysis was conducted prior to recruitment using an online calculator (Survey System, 2012) though the statistics used to conduct the power analysis

was based on the number of military personnel who are married or in a civil partnership at the time of data collection. A number of issues arose; the data is likely to be out-dated and the data only includes those who have registered their marital status on JPA (Joint Personnel Administration), the intranet-based personnel administration system used by the British Armed Forces. The information does not include boyfriends and girlfriends (of which this survey included). As it is also reliant on the reporting of personnel, those who are separated or divorced may not have updated their information on the system. It also does not specify whether partners are too, employed by the military, and so there may be duplication.

8.5 Participants

A total of 1002 attempted to complete the survey, however, 165 people did not proceed further than opening the survey, 7 did not agree to the online consent statement and 178 did not meet criteria (mainly because they too, were serving in the British Armed Forces). A further 89 did not proceed past the screening questions. A total of 563 participants began the survey.

8.6 Survey

The survey was developed based on previous literature, feedback from the intended sample and supervisor recommendations (See Appendix 1). The survey was inserted to Qualtrics, (2016), an online tool specifically designed to disseminate surveys. The survey included an online consent form (See Appendix 2), a link directing them to more information regarding the study (See Appendix 3) as well as a debrief page (See Appendix 4). Experts within the field of research and military research reviewed the reliability and validity of the survey. Further, the University of Lincoln research ethical committee has granted ethical approval for the research to be conducted (See Appendix 5).

The survey questions mainly included multiple choice scale of measurement. Please see Table 12 for a full list of demographic characteristics asked of participants.

Table 12: Demographics

Civilian Partner	**Military Partner**
Gender	Age
Age	Ethnicity
Ethnicity	Service Branch
Level of Education	Rank
Relationship Status	Years Served
Length of Relationship	
Living Status	
Children	
Employment	

The survey was split into four groups after the demographic variables had been completed. Participants were asked which best describes their situation in relation to deployment; whether their partner returned from deployment in the past five years and is due again in the next 12 months, whether their partner is due for deployment in the next 12 months, whether their partner has returned from deployment in the past five years or whether their partner is currently deployed. Please see Table 13 for deployment questions related to the route chosen.

Table 13: Deployment Details

Deployment			
Number of, locations and lengths of deployments in the past five years?			
Returned from deployment in the past five years and due again in the next 12 months?	Due for deployment in the next 12 months?	Returned from deployment in the past five years?	Currently deployed?
Returned from last?	Anticipated date of next deployment?	Returned from last deployment?	Anticipated length of deployment?
Total length of deployment?	Anticipated length of next deployment?	Total length of deployment?	Length of deployment so far?
Area of heightened tension?	Area of heightened tension?	Area of heightened tension?	Area of heightened tension?
Location?	Location?	Location?	Location?
Contact with partner?	Anticipated contact with partner?	Contact with partner?	Anticipated contact with partner?
Notice prior to deployment?	Notice prior to deployment?	Notice prior to deployment?	Contact so far with partner?
Extended deployment?		Extended deployment?	Notice prior to deployment?
Rest & Recuperation?		Rest & Recuperation?	Possibility of extension?
Post-operational deployment leave?		Post-operational deployment leave?	Eligibility for rest & recuperation?
Anticipated date of next deployment?			
Anticipated length of next deployment?			
Location of next deployment?			
Anticipated contact with partner?			
Notice prior to deployment?			

Following completion of the deployment related questions, all participants returned to complete the mental health measures. These were likert scales of measurement alongside idiosyncratic qualitative questions related to their appraisals of deployment in order to anchor the thoughts of respondents when answering the questions on the formal measures.

8.7 Measures of Psychological Distress, Resilience and Relationship Styles

8.7.1 Depression and Anxiety Stress Scale-42 items (DASS-42). (Lovibond & Lovibond, 1995).

The DASS-42 is a 42-item self-report questionnaire developed to assess the distinctive symptoms between depression, anxiety and physiological stress without cross-over construct contamination. The DASS is in line with Watson, et al's., (1995) tripartite symptom model of anxiety and depression and research has shown strong support that the DASS-42 represents the three factor constructs consistent with the predictions of this model i.e. alignment with DSM diagnoses of anxiety, depression and stress (Antony, Bieling, Cox, Enns, & Swinson, 1998; Brown, Chorpita, Korotitsch, & Barlow, 1997; Clara, Cox, & Enns, 2001; Crawford & Henry, 2003).

The DASS-42 items were introduced with "*please read each statement and select the option which indicates how much the statement applied to you over the past week. Do not spend much time on any statement*". This was followed by such items as "*I found myself getting upset by trivial things*" or "*I found it difficult to relax*". Participants responded on a 4-point scale ranging from 0 (*did not apply to me at all*) to 3 (*applied to me very much, or most of the time*). The responses to the 42 items are divided into three sub-scales of 14-items each representing depression, anxiety, or stress. These are summed to create an overall distress score for each of the sub-scales with higher scores reflecting higher distress. No items required reverse scoring.

Cut-off scores have been suggested (See Table 14) though there appears to be limited evidence to support the criterion validity of these. Perhaps, the lack of

evidence is related to the authors' suggestion that interpretation of DASS scores should be dimensional rather than categorical (Lovibond & Lovibond, 1995).

Table 14 DASS-42 Cut-off Scores (Lovibond & Lovibond, 1995).

	Normal	Mild	Moderate	Severe	Extremely Severe
Depression	0 - 9	10 - 13	14 - 20	21 - 27	28+
Anxiety	0 - 7	8 - 9	10 - 14	15 - 19	20+
Stress	0 - 14	15 - 18	19 - 25	26 - 33	34+

The psychometric properties of the DASS-42 have been the focus of a number of studies that have found good reliability and construct/convergent validity with other valid measures of depression and anxiety (See Journal Paper). The DASS-42 has also been validated across general and clinical samples (Antony et al., 1998; Brown et al., 1997; Crawford & Henry, 2003; Lovibond & Lovibond, 1995; Nieuwenhuijsen, de Boer, Verbeek, Blonk, & van Dijk, 2003; Page, Hooke, & Morrison, 2007; Ramli, Rosnani, & Fasrul, 2012). Some studies have found that females are more likely to score higher on the depression, anxiety and stress scales of the DASS-42 when compared to their male twin (Burton et al., 2015) or males who had experienced the same trauma (Farooqi & Habib, 2010).

The shortened version of the DASS-42, the DASS-21, was considered due to the reduced administration time, however, Henry & Crawford, (2005) suggest the shortened scale better represents a tool to assess general psychological distress rather than specific diagnosis. In addition, the discriminant validity is not yet known and it has not been validated in clinical samples (Osman et al., 2012) and so it was not used. Other measures of depression, anxiety and stress were also considered, however, many contained somatic items which are likely to reflect the participants' presenting condition rather than any mood disturbance;

the DASS-42 was developed to exclude these to address this problem specifically (Parkitny & McAuley, 2010).

8.7.2 Perceived Stress Scale-10 items (PSS-10) (Cohen, Kamarck, & Mermelstein, 1983).

The PSS-10 is a 10-item self-report questionnaire designed to measure the degree to which situations in one's life are appraised as stressful. Items are designed to tap into how unpredictable, uncontrollable, and overloaded respondents find their lives (Cohen et al., 1983). The scale includes a number of direct queries about current levels of experienced stress.

The PSS-10 items were introduced with "*the next set of questions asks you about your feelings and thoughts during the last month. In each case, please select the option which indicates how often you felt or thought a certain way*". Each item then began "*In the last month, how often have you*…" which was followed by, for example, "*nervous and stressed"* or "*felt that difficulties were piling up so high that you could not overcome them".* Participants responded on a 5-point scale ranging from 0 (*never*) to 4 (*very often*). The responses to the 10 items are summed to create a psychological stress score, with higher scores indicating greater perceptions of psychological stress. Of the 10 items, 4 items were worded in a positive direction, so they were reverse-scored.

Cut-off scores have been suggested (See Table 15) and although the authors highlight good criterion validity (Cohen et al., 1983), there is limited evidence to support this and is yet to be fully established (Cohen & Williamson, 1988; Mitchell, Crane, & Kim, 2008). Van Eck and Nicolson, (1994) have suggested that further evidence is needed using biological markers of stress (i.e. cortisol) as criterion variables which are considered the most reliable measures of its psychometric properties.

Table 15 PSS-10 Cut-off scores

	Much Lower than Average	Slightly Lower than Average	Average	Slightly Higher than Average	Much Higher than Average
PSS Score	0 - 7	8 - 11	12 - 15	16 - 20	21+

The psychometric properties of the PSS-10 have been the focus of a number of studies that have found good reliability and construct/convergent validity with other valid measures of stress (See Journal Paper).

The PSS-10 has also been validated among different populations including general and clinical samples (Andreou et al., 2011; Chaaya, Osman, Naassan, & Mahfoud, 2010; Chee Siang, Rafee Baharuddin, Abd Rahman, Azhar Shah, & Bahari Mohd Noor, 2016; Cohen, & Williamson, 1988; Lesage, Berjot, & Deschamps, 2012; Leung, Lam, & Chan, 2010; Mitchell et al., 2008; Nordin & Nordin, 2013; Örücü & Demir, 2009; Reis, Hino, & Añez, 2010; Remor, 2006; Roberti, Harrington, & Storch, 2006; Wongpakaran & Wongpakaran, 2010).

Some studies have found inconsistencies in gender differences in outcomes using the PSS-10; few studies have found no gender differences (Cohen et al., 1983; Pbert, Doerfler, & DeCosimo, 1992; Ramírez & Hernández, 2007), however, a number of studies have found that women score higher on the PSS-10 than do males (Andreou et al., 2011; Lesage et al., 2012; Leung et al., 2010; Remor, 2006).

The PSS-14 was considered, though due to the consistently reported superior psychometric properties of the PSS-10 (Lee, 2012) and the shortened length for completion, it was not used. The PSS-10 is the most widely used psychological instrument for measuring the perception of stress (Taylor, 2015) which has been used regularly in US literature previously discussed. After consideration, it was felt for consistency and application reasons, the PSS-10 would be used.

8.7.3 Life Events Checklist (LEC) (Weathers, Blake, et al., 2013).

The LEC is a self-report questionnaire developed to help facilitate diagnosis of Post-Traumatic Stress Disorder (PTSD), by anchoring respondents thoughts prior to completing a trauma related psychometric tool, and screening for potentially traumatic events in a respondent's lifetime (Weathers, Blake, et al., 2013). The LEC assesses exposure to 16 events that are known to potentially result in PTSD or distress and includes one additional item assessing any other stressful event not captured in the first 16 items.

The LEC items were introduced with "*listed below are a number of difficult or stressful things that sometimes happen to people and those around them. For each event, check one or more of the boxes that indicate whether*…". Participants responded by highlighting whether each event, such as "*natural disaster*" or "*combat or exposure to a war-zone*", had a) happened to them personally, b) witnessed it happen to someone else, c) learned about it happening to someone close to them, d) were exposed to it as part of their job, e) weren't sure of it applied to them, or f) it did not apply to them.

The LEC is not recommended as a stand-alone assessment of mental health difficulties and so limited evidence assessing the psychometric properties of the scale exists (Weathers, Blake, et al., 2013). Good construct/convergent validity has, however, been found with measures assessing PTSD symptoms as well as predicted psychological distress known to relate to traumatic exposure (Gray, Litz, Hsu, & Lombardo, 2004). Further research is required to determine the extent of validity, reliability and consistency, though this is likely to be difficult given its function and aims.

In justifying the use of the measure for this research, the gold standard for the diagnosis of PTSD recommends that the LEC is used in conjunction with PTSD checklists and screening tools in order to anchor respondents' thoughts. Further, the use of the LEC as an adjunct to the PCL-5 allowed attempts to counter-act potential confounds and in turn increasing the application of current

mental health difficulties to the military lifestyle or deployment (rather than other previous traumas).

8.7.4 Post-Traumatic Stress Disorder Checklist-5 (PCL-5) (Weathers, Litz, et al., 2013).

The PCL-5 is a 20-item self-report questionnaire designed to screen for PTSD related symptoms and corresponds with the Diagnostic and Statistical Manual (DSM) criteria for PTSD.

The PCL items followed the LEC and was introduced with "*now complete the following questions, keeping in mind the previous worst event. Below is a list of problems and complaints that people sometimes have in response to stressful life experiences. Please read each one carefully and select an option which indicates how much you have been bothered by that problem in the last month*". This was followed by such items as "*repeated, disturbing and unwanted memories, thoughts, or images of the stressful experience*" and "*being super alert or watchful or on guard*". Participants responded on a 5-point scale ranging from 1 (*not at all*) to 5 (*extremely*). These are summed to create an overall score to determine whether individuals screen positively or negatively for trauma related symptoms, with higher scores reflecting higher symptomatology. A score of 36 or higher, is suggestive of a positive screen of trauma (Weathers, Litz, et al., 2013).

The psychometric properties of the PCL-5 have been the focus of a number of studies that have found variable reliability and good construct/convergent validity with other valid measures of distress associated with trauma and the DSM factor structure (See Journal Paper). The PCL-5 has also been validated across military, civilian, general and clinical samples (Ashbaugh, Houle-Johnson, Herbert, El-Hage, & Brunet, 2016; Bovin et al., 2016; Keen, 2008; Weathers, Litz, et al., 2013; Wortmann et al., 2016). In addition, although some military personnel may not have directly experienced trauma, associations have been found between high scores on the PCL-5 and greater "impaired marital, family and social relationships in wives" (Goff et al., 2006)

There is limited evidence exploring the criterion validity of the PCL-5 though what is published suggests this is adequate (Wortmann et al., 2016). There seems an absence of validation studies using the PCL-5 with females and diagnostic efficiency for females has been found to be no greater than chance (Dobie et al., 2002; Parker-Guilbert, Leifker, Sippel, & Marshall, 2014), though Carter-Visscher et al., (2010) found modest differences between gender and gender did not moderate risk factors and baseline mental health.

The PCL was used for this sample as it is the only psychometric tool to date that has been used to assess secondary traumatization in a military partner sample (Bjornestad et al., 2014) and its use alongside the LEC to anchor respondents' thoughts, is the recommended gold standard for assessing trauma symptomatology. Idiosyncratic qualitative enquiry was also included for further attempts to focus respondents.

8.7.5 Experiences in Close Relationships-Revised (ECR-R) (Fraley, Waller, & Brennan, 2000).

The ECR-R is a 36-item self-report measure of adult attachment styles, revised from Brennan, Clark, and Shaver's, (1998) Experiences in Close Relationships (ECR) questionnaire. The ECR-R measures individuals on two subscales of attachment: avoidance and anxiety. In general, avoidant individuals find discomfort with intimacy and seek independence, whereas anxious individuals tend to fear rejection and abandonment in romantic relationships (Fraley et al., 2000).

The ECR-R items were introduced with "*the statements below concern how you feel in emotionally intimate relationships. We are interested in how you generally experience relationships, not just what is happening in a current relationship*". This was followed by such items as "*I'm afraid that I will lose my partner's love*" and "*it's easy for me to be affectionate with my partner*". Participants responded on a 7-point scale ranging from 0 (*strongly disagree*) to 6 (*strongly agree*). The responses to the 36 items are divided into two sub-scales of 18 items each representing anxious attachment styles or avoidant

attachment styles. The average of the sum of each sub-scale create an overall score for each type of attachment and higher scores reflect higher attachment anxiety and/or avoidance. Prototypically, individuals with secure attachments will score low on both sub-scales. Of the 36 items, 14 were positively worded and so required reverse scoring.

Cut-off scores are not recommended for the ECR-R as it suggests that attachment styles are best understood continuously, rather than categorically (Fraley et al., 2000). Limited research exists to support the criterion validity of the scale, though some research has suggested that average scores for each sub-scales of 4 or above begin to reflect higher anxiety and/or avoidance (Fraley, Heffernan, Vicary, & Brumbaugh, 2011; Sibley, Fischer, & Liu, 2005).

The psychometric properties of the ECR-R have been the focus of a number of studies that have found superior reliability and construct/convergent valid measures of attachment styles (See Journal Paper). The ECR-R has also been validated across general and clinical samples (Busonera, Martini, Zavattini, & Santona, 2014; Favez, Tissot, Ghisletta, Golay, & Notari, 2016; Fraley et al., 2000; Hanak & Dimitrijevic, 2013; Kooiman, Klaassens, van Heloma Lugt, & Kamperman, 2013; Sibley et al., 2005). The ECR-R has not shown large sex differences in outcome data (Fraley et al., 2011) though it appears that samples include more women than men and may not represent the full range of psychological variation of attachment styles.

As the ECR-R has been described as increasingly likely to capture the variance in romantic attachment styles (Fraley et al., 2011) and given its consistently reported superior properties, including increased reliability compared to other similar scales (Fairchild & Finney, 2006; Ravitz, Maunder, Hunter, Sthankiya, & Lancee, 2010; Sibley et al., 2005), the ECR-R was felt more appropriate for this research.

8.7.6 Defence Style Questionnaire-40 items (DSQ-40) (Andrews, 1993).

The DSQ-40 is a 40-item self-report questionnaire designed to highlight individuals' defence mechanisms and was initially created in alignment with the Diagnostic and Statistical Manual-IV (American Psychiatric Association, 2000).

The DSQ items were introduced with "*this questionnaire consists of a number of statements about personal attitudes. There are no right or wrong answers. Using the 9-point scale below, please indicate how much you agree or disagree with each statement*". This was followed by such items as "I get satisfaction from helping others and if this were taken away from me I would get depressed" and "people say I tend to ignore unpleasant facts as if they don't exist". Participants responded on a 9-point scale ranging from 1 (strongly disagree) to 9 (strongly agree). The responses to the 40-items are used to derive scores for 20 defence mechanisms, two-items for each (See Table 16 for the list of defence mechanisms. Three sub-scales can also be scored; mature defences (8 items), neurotic defences (8 items) and immature defences (24 items). Individual defence scores are the average of the two-items for that defence and the sub-scale scores are the average of the defence scores contributing to that sub-scale. No items required reverse scoring and higher scores reflect an increased likelihood the individual employs that defence (Andrews, Singh, & Bond, 1993).

Though these defence styles are no longer included in the most recent DSM 5, it is not necessarily because they no longer exist, but instead a result of the attempts of the DSM to seemingly cleanse itself of psychodynamic constructs. "The truth is in the whole" demonstrates how the DSM 5 (American Psychiatric Association, 2013) is not a reliable nor a realistic demonstration in understanding mental health difficulties. It actively dismisses and reduces the complex interactions between bio, psycho, social, historical, cultural factors including defence mechanisms and psychodynamic concepts that have seemingly just been deleted.

Table 16 Defence Mechanisms

Mature	Neurotic	Immature
Sublimation	Undoing	Projection
Humour	Pseudo-Altruism	Passive Aggression
Anticipation	Idealisation	Acting Out
Suppression	Reaction Formation	Isolation
		Devaluation
		Fantasy
		Denial
		Displacement
		Dissociation
		Splitting
		Rationalisation
		Somatization

The DSQ-40 is the product of various refinements over time (from 88 items to 72 and then 40) in response to the lack of reliability and validity of first (Type of Defence) and second order factors (Individual Defence Mechanisms).

The psychometric properties of these various refinements have been the focus of a number of studies that have found moderately high internal consistency and re-test reliability when compared to the previous editions (Thygesen, Drapeau, Trijsburg, Lecours, & De Roten, 2008) and low to moderate construct/convergent validity with other valid measures of anxiety and defence styles (Brennan, Andrews, Morris-Yates, & Pollock, 1990; Mehlman & Slane, 1994). On the other hand, face validity of some items on the DSQ has long been a concern (Andrews et al., 1993; Chabrol et al., 2005; Saint-Martin, Valls, Rousseau, Callahan, & Chabrol, 2013) and more recently its dimensionality of the individual defence mechanisms has been called into question (Wilkinson & Ritchie, 2015).

The evidence suggest that psychometric properties still require investigation and improvement, though it must be considered, that given the heterogeneous nature of the three high order factors and the homogenous nature of the individual defences, whether the procedures usually adopted to assess validity (i.e. coefficient alpha) are adequate enough to reflect the true nature of the psychometric qualities; in turn suggesting that the evidence reflects an

inadequate approach to assessing quality rather than an inadequate psychometric. In response to the likelihood all tools assessing defence styles are likely to produce similar limitations, it was felt that as a relatively shorter tool, it would be more helpful for this study.

8.8 Potential Confounding Variables

Historical and current mental health was considered in the development of the survey given that outcomes may be exacerbated, either way, depending on length and frequency of negative mental health difficulties leading to moderated presentations of differing severities. The survey attempts to allow for investigations into this, through direct questions about frequency, length and type of mental health diagnoses, as well as any medicinal or psychological help they or their military counterpart may have received. Idiosyncratic questions (open and closed) were also included to determine mental health variables according to stage of deployment and how these impact on health role, and coping ability. These were all attempts to increase the application of mental health difficulties to the military lifestyle and/or deployment (rather than previous trauma or experience), creating a focus for respondents when providing responses to the measures and questions throughout the survey, as well as avoiding collusion with media reports that suggest military wives feel silenced or unheard. As there is no previous research in this area, it has given answers previously unknown but also has provided the opportunity to provide a number of further follow-up studies with this data.

Location of deployments and the rank of the military partner may be indicative of the types of job military personnel may be doing while deployed, for example, lower ranking soldiers are more likely to be “front line”. This may lead to increased perceptions of “danger” and in turn impact on the mental health responses. To account for the potential confound of previous traumatic experiences, the PCL-5 and LEC have been included. The above attempt to ensure they can be accounted for in any analysis.

8.9 Analysis

The scores of the distress measures were entered onto SPSS, a ratio variable was computed to provide a total score for each of the mental health outcomes. Each total score was then further computed into a new variable to provide categories for each of the measures based on their respective cut-off scores.

Although qualitative data existed, it was not mandatory for respondents to complete so was not sufficient to signify a mixed-methods approach; responses were mainly one word answers. It is to be used by the researcher and supervisors to conduct a qualitative piece of research; the area is too important and so requires a research study in itself.

8.9.1 Secondary Analysis

In addition, basic frequency and descriptive statistics were performed to determine the prevalence of defence mechanisms in military partners [Aim 1]. A Kruskal-Wallis H was conducted to assess whether any differences exist in defence mechanisms according to stage of deployment (due to violation of assumptions) [Aim 2]. Defence style outcomes were also included in the correlation analysis and the five-stage hierarchical multiple regression [Aim 3], as per outline in the journal paper.

9. Extended Results

Varying completion rates continued for the DSQ 40 (n=256), which further suggests the decline in completion rates may have been in response to the length of time taken to work through the survey.

9.1 Sample characteristics

As shown in Table 17, the majority of participants were female, from a white background, were married with children, and employed full-time, with military partners serving in the ARMY or RAF. Over three quarters of the sample reported their partner as non-commissioned officers. The majority of the sample

lived together full-time, located far from base (more than 2 miles) and 80% reported living far from family (more than 30 miles). The number of previous deployments in the past five years ranged from 1 to over 30. Three ages were removed from the descriptive as outliers (reported a birthdate suggesting they were 166 years old).

Table 17 Demographic characteristics of respondents.

	All	
	n	*%*
Gender (n=563)		
Male	8	1.4%
Female	552	98%
Prefer not to say	3	0.5%
Ethnicity (n=563)		
White Background	558	99.1%
Chinese	1	0.2%
Other Mixed Ethnic Background	1	0.2%
Prefer not to say	3	0.5%
Education (n=563)		
College degree or less	299	53%
Higher than a college degree	245	43.6%
Prefer not to say	19	3.4%
Employment (n=563)		
No	49	8.7%
Yes	387	68.8%
Voluntary	5	0.9%
Stay at Home Parent	120	21.3%
Prefer not to say	2	0.4%
Marital Status (n=563)		
Married	489	86.9%
Civil Partnership	2	0.4%
Engaged	13	2.3%
In a Relationship	38	6.7%
Split up	4	0.7%
Separated	10	1.8%
Divorced	5	0.9%
Widowed	2	0.4%

Children (n=561)		
Yes	426	75.9%
No	121	21.6%
Pregnant with First Child	14	2.5%
Military Branch Partner (n=543)		
Royal Navy	57	10.5%
Royal Marines	17	3.1%
British Army	172	31.7%
Royal Air Force	297	54.7%
Rank Partner (n=543)		
Non-Commissioned	425	78.3%
Commissioned	118	21.7%
Living Status (n=559)		
Live Together Full-Time	453	81%
Live Together Part-Time	82	14.7%
Do Not Live Together	24	4.3%
Not Living Together Distance (n=103)		
Less than 2 miles apart	8	7.8%
More than 2 miles apart	95	92.2%
Location of Home (n=563)		
On Base	145	25.8%
Close to Base (within 2 Miles)	192	34.1%
Far from Base (more than 2 Miles)	226	40.1%
Family Distance (n=563)		
Within 30 Miles	118	21%
More Than 30 Miles	445	79%
Number of Prior Partner Deployments in the Past 5 Years (n=466)		
1 to 5	396	84.9%
6 to 10	46	9.9%
11 to 29	19	4.0%
30+	5	1.1%
	M	*SD*
Ages in Years (n=563); Range: 19 – 61 years.	35.80	7.61
Duration of the Relationship in Years (n=563) Range: 1 – 39 Years.	10.86	6.39
Number of Children (n=424) Range: 1 – 5.	2.07	0.883
Years of Service Partner (n=543) Range: 1 – 42 Years.	14.3	7.35

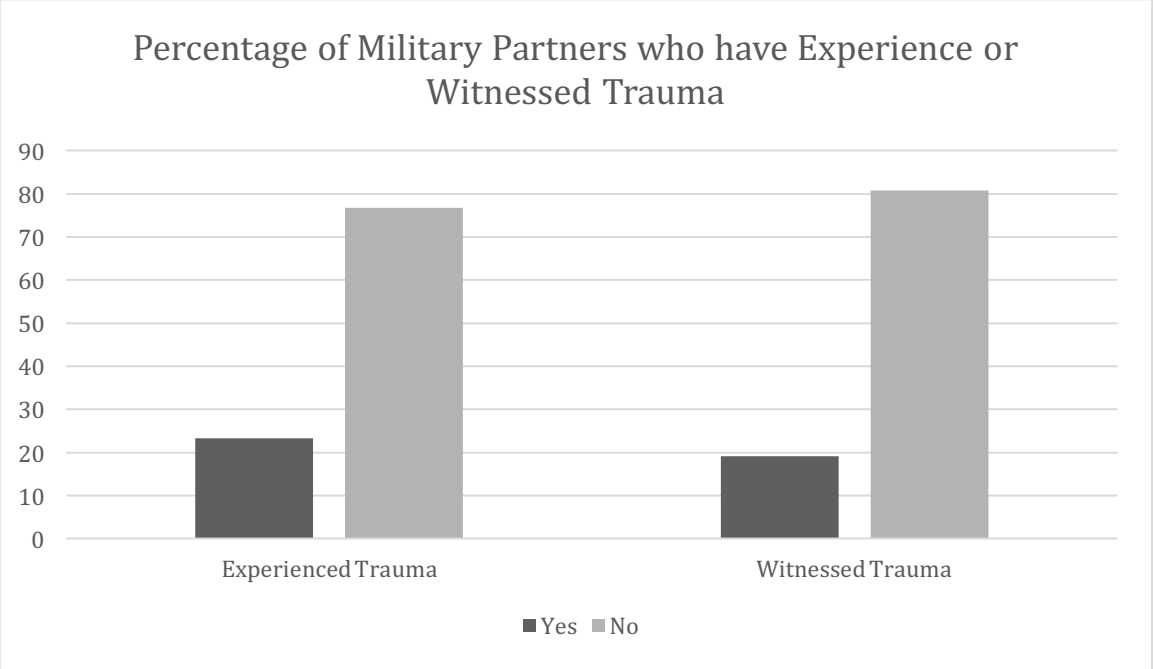
9.2 Prevalence of mental health difficulties and attachment styles

Table 3 of the Journal Paper: Descriptive results show that for depression, none of this sample fell within the 'normal' range, 54.2% fell within the 'mild to moderate' range and 45.8% fell within the 'severe to extremely severe' range. For anxiety, 22.1% fell within the 'normal' range, 59.2% fell within the 'mild to moderate' range and 18.7% fell within the 'severe to extremely severe' range. For stress, 13.7% fell within the 'normal' range, 49.2% fell within the 'mild to moderate' range and 37.1% fell within the 'severe to extremely severe' range. For perceived stress, descriptive results show that 7.1% fell within the much lower than average range, 7.7% fell within the slightly lower than average range, 15.4% within the average range, 24.7% in the slightly higher than average range and 45.1% in the much higher than average range.

Assumptions of normality, homogeneity of variances and linearity were met in order to conduct a parametric t-test to determine whether significant differences exist between military partners, the general population and a clinical sample. Assumptions of normal distribution, homogeneity of variances and linearity for the norms used as comparisons are assumed, as no raw data available.

Table 4 of the Journal Paper: The mean scores for military partners on the depression, anxiety and stress sub-scales of the DASS-42 were 22.1 (SD 8.9; Severe), 20.48 (SD 8.08; Extremely Severe) and 24.43 (SD 9.25; Moderate) respectively. The mean score for military partners on the PSS-10 was 19.55 (SD 7.5; Slightly higher, though almost much higher, than Average).

As recommended by the Centre for PTSD (Weathers, Litz, et al., 2013), the LEC was used to anchor the respondents' thoughts when answering questions related to previous traumas on the PCL-5. Table 18 presents the percentage of traumatic events that military partners have either experienced or witnessed.



Graph 1 LEC and PCL-5 Experienced or Witnessed Traumas

When visually analysing the responses given for what their most traumatic experience was, it was commonly an experience unrelated to their partner's deployment. The majority reported on negative physical health of themselves or loved/close ones, death of loved/close ones including suicide, sexual abuse/assault of self or close ones, road traffic accidents, and natural disasters. There were eight responses that were linked to the deployment of their partner.

In relation to questions around mental health of military personnel, of those that did report their partner having mental health difficulties highlighted in the journal paper (n=17), 47% said their partner continues to have mental health difficulties and 64.7% reported their partner having or have had other forms of treatment such as psychotherapy.

Frequencies conducted on the questions developed in relation to mental health of military partners showed that a total of 235 military partners disclosed whether they are currently diagnosed with a mental health difficulty; 51.9% said no while 43.8% said yes. The remaining (4.3%) preferred not to disclose. The most commonly reported mental health difficulties included panic, anxiety, depression and post-natal depression. Of those that have been diagnosed,

43.6% were taking medication and 24.5% were receiving other forms of treatment such as psychotherapy.

Military partners generally displayed mature defence styles with a mean score of 5.3 (SD=1.2), followed by a mean score of 4.8 for neurotic defences (SD=1.0) and 3.9 (SD=.9) for immature defences. The most common defence mechanism was humour (M=5.9, SD=1.9), closely followed by pseudo-altruism (M=5.7, SD=1.6) and then anticipation (M=5.6, SD=1.7), suppression (M=5.1, SD=1.9), reaction formation (M=5.1, SD=1.8) and rationalization (M=5, SD=1.6).

9.3 Differences in mental health outcomes, attachment styles and defence mechanisms according to deployment stage.

9.3.1 Analysis of Variance (ANOVA) and Non-Parametric Equivalents.

Descriptive results, based on stage of deployment, showed that 26.4% had partners who had returned from deployment and were due to be deployed again in the next 12 months (group one). A total of 8.4% of partners were due for deployment in the next 12 months (group two), 21.9% of the respondents' partners were currently deployed (group 3) and 43.3% had returned from deployment in the past five years (group 4).

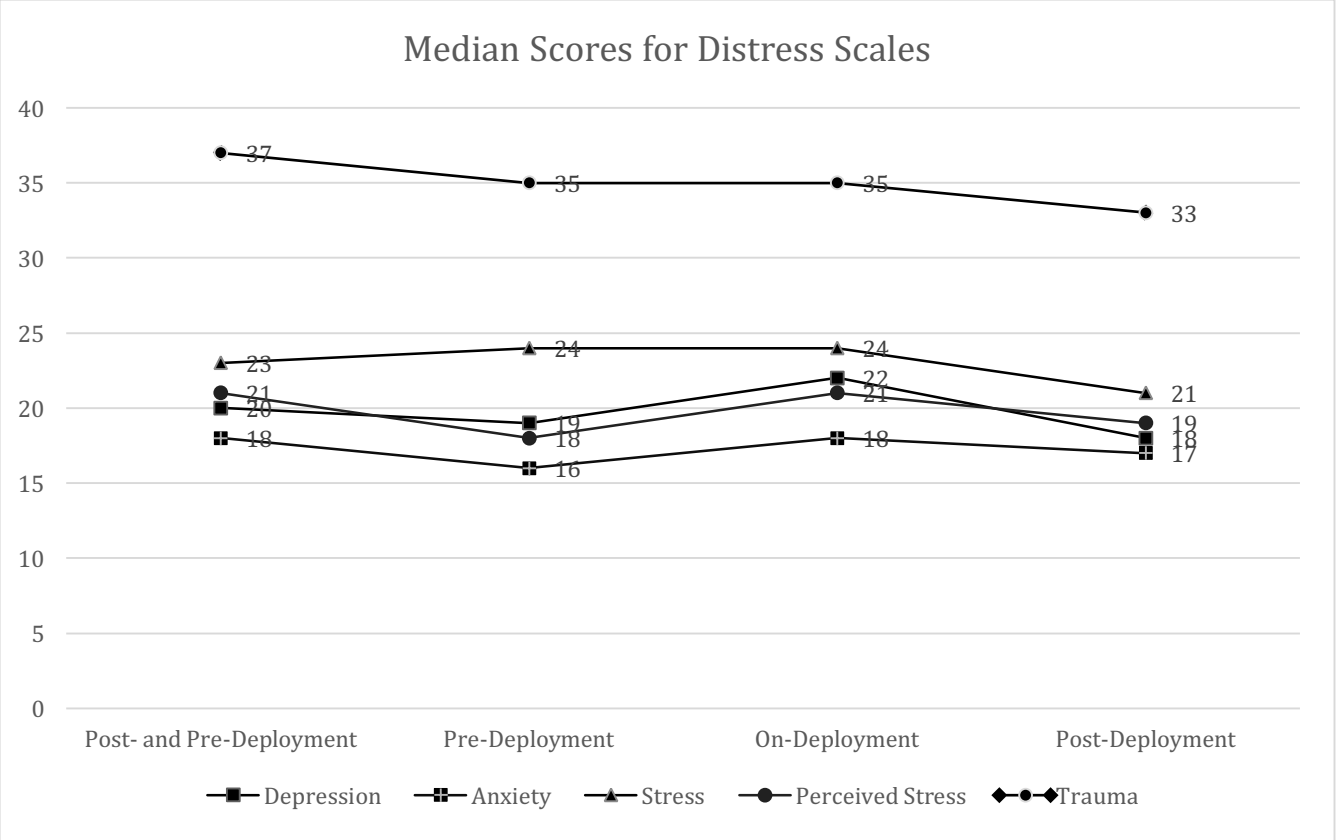
In group one, the average time since their partner's last deployment was 12 months and the average length until the next deployment in group one was 5 months. In group two, the participants anticipated their partner to be leaving on average of 5 months. In group three, participants' partners had been way on average of 3 months. Lastly, in group four, partners of participants had returned from their last deployment on average of 22 months ago. Table 20 reports all specific deployment information split according to stage of deployment.

Table 20 Descriptives based on stage of deployment

	Post and Due		Due		On		Post	
	N = 123	*26.4%*	*N = 39*	*8.4%*	*N = 102*	*21.9%*	*N = 202*	*43.3%*
Months since deployment (N=118; N=194)								
1 to 12 months	75	63.6%	-	-	-	-	71	37%
13 to 25 months	22	18.6%	-	-	-	-	59	30.4%
26+ months	21	17.8%	-	-	-	-	64	32.6%
Length of deployment in months (N=118; N=100; N=194)								
1 to 3 months	53	45%	-	-	39	39%	39	20.1%
4 to 6 months	52	44%	-	-	46	46%	115	59.3%
7 to 10 months	13	11%	-	-	15	15%	40	20.6%
Area of heightened tension (N = 103; N=94; N=174)								
Yes	49	47.6%	-	-	26	28%	106	61%
No	54	52.4%	-	-	68	72%	68	39%
How much notice before deployment (N=118; N=100; N=36)								
More than 12 months	3	2.5%	-	-	2	2%	13	6.7%
7 to 12 months	18	15.3%	9	25%	19	19%	36	18.6%
4 to 6 months	34	28.8%	15	42%	28	28%	58	29.9%
1 to 3 months	38	32.2%	12	33%	34	34%	45	23.2%
Less than 1 month	25	21.2%	-	-	17	17%	42	21.6%
Extended deployment (N=117; N=110; N=194)								
Yes	24	20.5%	-	-	47	47%	36	18.6%
No	93	79.50%	-	-	23	23%	158	81.4%
Don't know					30	30%		
Rest & Recuperation (N=117; N=100; N=193)								
Yes	22	18.8%	-	-	25	25%	92	47.7%
No	95	81.2%	-	-	60	60%	101	52.3%
Don't know					15	15%		
Post-Operational Deployment Leave (N=116; N=192)								
Yes	70	60.3%	-	-	-	-	132	68.8%
No	46	39.7%	-	-	-	-	60	31.3%
When partner is due for deployment in months (N=95; N=37)								
1 to 6 months	66	69.5%	26	70.3%	-	-	-	-
7 to 12 months	29	30.5%	11	29.7%	-	-	-	-
Anticipated length of next deployment (N=95; N=37)								
1 to 3 months	45	47.4%	14	37.8%	-	-	-	-
4 to 7 months	50	52.6%	23	62.2%	-	-	-	-
How much notice before due deployment (N=95; N=36)								
1 to 6 months	61	64.2%	27	75%	-	-	-	-
7 to 18 months	34	35.8%	9	25%	-	-	-	-
Area of heightened tension next deployment (N=70)								
Yes	20	28.6%	-	-	-	-	-	-
No	50	71.4%	-	-	-	-	-	-

The data set violated one of the assumptions of conducting a parametric one-way analysis of variance (ANOVA); after completing exploratory boxplots, there were a number of outliers in the data. Data entry and measurement errors were checked; however, outliers do not appear to be a result of these. One possible way of accounting for this is to remove outliers one-by-one and re-test. There is no good reason to reject them as invalid, as high scores merely reflect high distress and so the non-parametric equivalent, Kruskal-Wallis H, was used to determine if there were differences in the mental health outcome scores between the four stages of deployment. The data set met assumptions for Kruskal-Wallis H including independence of observations and matched distributions of scores for each group.

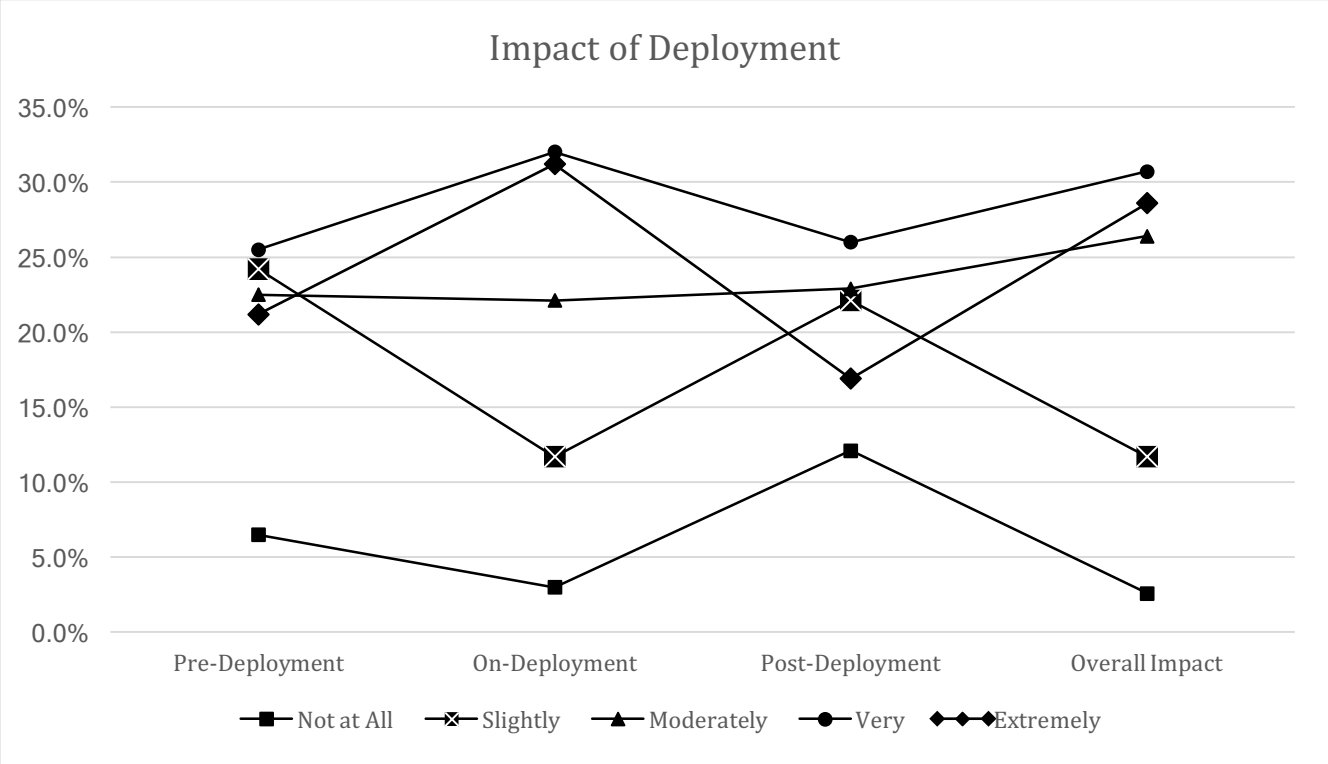
Though the median distress scores between the four groups of deployment were not statistically different, Graph 2 presents the median scores of depression, anxiety, stress, perceived stress and trauma symptoms, referred to in the journal paper.



Graph 2 Median Scores for Distress Scales.

Though the median scores rated for how much deployment impacts on military partners health and wellbeing were not statistically significant, the median ratings suggest that military partners report moderate impact post- and pre-deployment (3) and high impact during deployment stage (4); Frequency statistics show that prior to deployment, 46.7% felt that the deployment impacted negatively on their health and wellbeing very or extremely, 47.7% felt that the deployment impacted on their health and wellbeing slightly or moderately and 6.5% felt that deployment did not impact on their health and wellbeing. During deployment, 63.2% felt that the deployment impacted negatively on their health and wellbeing very or extremely, 33.8% slightly or moderately and 3% felt that deployment did not impact on their health and wellbeing. Post deployment, 42.9% felt that the deployment impacted negatively

on their health and wellbeing very or extremely, 45% slightly or moderately and 12.1% not at all. 59.3% reported a very or extremely overall negative impact of deployment on their health and wellbeing, 38.1% reported a slightly or moderate negative impact and 2.6% not at all. See Graph 3 for overview.



Graph 3 Self-reported impact of deployment on health and wellbeing at each stage of deployment.

The Dependent Variables (DV's) had similarly shaped distributions for all groups of the Independent Variable (IV), therefore meets assumption to conduct the non-parametric post-hoc analyses, Mann-Whitney U test, to verify previous analysis.

Assumption tests were carried out to determine the appropriateness of a one-way ANOVA to investigate any significant differences between defence mechanisms and attachment styles based on stage of deployment. Inspection of boxplots highlighted genuine outliers, neither the result of a data entry error or measurement error, for all three of the defence mechanisms. Kruskal-Wallis non-parametric equivalent is therefore more appropriate.

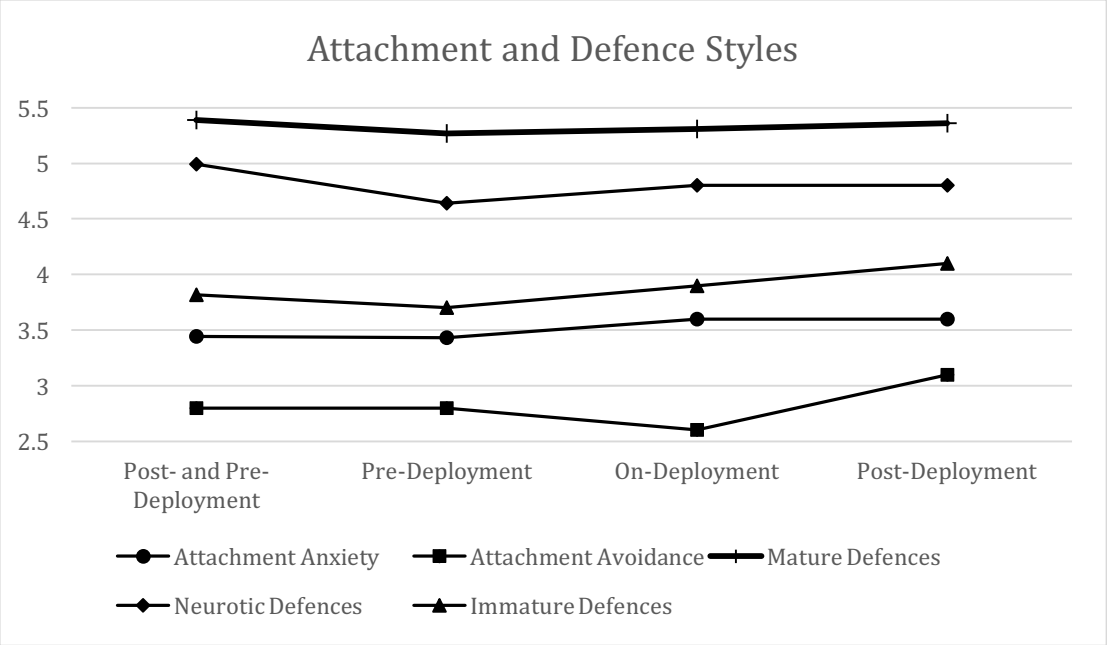
There were no outliers evident for attachment styles and so further assumptions were tested to ensure ANOVA could be used; Shapiro-Wilk test of normality was carried out. This assumption was met for the attachment anxiety scale ($p>.05$), however, the attachment avoidance scale was not normally distributed ($p<.05$). Assumption checking therefore continued in order to use a one-way ANOVA for the attachment anxiety scale as a non-parametric Kruskal-Wallis was now more appropriate for the attachment avoidance scale. There was homogeneity of variances, as assessed by Levene's test for equality of variances ($p=.149$) and so the final assumption for ANOVA was met for the attachment anxiety score. Mann-Whitney U post hoc tests were used to verify the results of the ANOVA for attachment anxiety. The assumptions were met in that the DV's had similarly shaped distributions for all groups of the IV.

Descriptive statistics outline that attachment anxiety remained relatively stable between post and pre-deployment ($n=56$, $M=3.44$, $SD=1.4$), pre-deployment ($n=20$, $M=3.44$, $SD=1.77$), on deployment ($n=66$, $M=3.57$, $SD=1.28$) and post deployment ($n=94$, $M=3.56$, $SD=1.37$) groups. There were no statistically significant differences in attachment anxiety scores between the different stages of deployment, $F(3, 232)=.135$, $p=.939$.

As assumptions for parametric tests were violated for the defence mechanisms data, four assumptions for a Kruskal-Wallis H non-parametric equivalent were assessed and met (one DV that is measured at the continuous or ordinal level, one IV that consists of two or more categorical independent groups, independence of observations and distribution of scores were similar as assessed by inspection on boxplots). A Kruskal-Wallis H test was therefore conducted for each of the defence mechanism scores based on stage of deployment.

Median defence mechanism scores were not significantly different between groups, $X^2(3) =.866$, $p=.834$ (mature defence), 3.544, $p=.315$ (neurotic defence), 4.588, $p=.205$ (immature defence). As before, Mann-Whitney U post hoc tests were conducted to confirm these results but also to determine where differences might exist when considering two stages of deployment separately.

On inspection, the results confirm previous analysis. Graph 4 provides average scores on attachment styles and defence mechanisms, based on deployment stage (graph).



Graph 4 Mean scores for attachment styles and defence mechanisms based on stage of deployment.

9.4 Relationship between variables and mental health outcomes

9.4.1 Correlation Analysis

Correlations indicate what would be expected between defence styles and distress measures and in the right direction. It appears that small negative correlations exist between age (lowered) and neurotic and immature defence styles. Table 24 provides the correlations corresponding to those reported in the Journal Paper.

Table 24 Defence Mechanism Correlations

		DEPtot	ANXtot	STRESS total	PSS total	PCL total	Experienced Trauma	Witnessed Trauma	Attachment Anxiety	Attachment Avoidance	Mature Defences	Neurotic Defences	Immature Defences	age	Rank	Live together full-time	Live together part-time	Children	Length of Relationship	No. of times deployed in past 5 years	Loca height tens
ture fenses	Pearson Correlation	-.442**	-.341**	-.369**	-.404**	-.254**	-0.036	.125*	-.378**	-.247**	1	0.058	-0.095	0.048	-0.024	0.014	0.017	-0.05	-0.026	0.051	-(
	Sig. (2-tailed)	0	0	0	0	0	0.569	0.046	0	0		0.357	0.129	0.448	0.703	0.824	0.792	0.425	0.68	0.421	(
	N	256	256	256	256	256	256	256	236	236	256	256	256	254	256	256	256	256	256	256	
urotic fenses	Pearson Correlation	.183**	.257**	.230**	.259**	.271**	.125*	.218**	.289**	0.056	0.058	1	.501**	-.165**	0.006	-0.085	0.049	-0.104	-0.107	-0.058	(
	Sig. (2-tailed)	0.003	0	0	0	0	0.046	0	0	0.395	0.357		0	0.009	0.928	0.173	0.439	0.098	0.087	0.355	(
	N	256	256	256	256	256	256	256	236	236	256	256	256	254	256	256	256	256	256	256	
nature fenses	Pearson Correlation	.394**	.360**	.360**	.412**	.421**	.300**	.284**	.514**	.467**	-0.095	.501**	1	-.124*	0.119	-0.077	0.023	-0.088	-0.105	-0.109	(
	Sig. (2-tailed)	0	0	0	0	0	0	0	0	0	0.129	0		0.049	0.057	0.22	0.718	0.159	0.092	0.081	(
	N	256	256	256	256	256	256	256	236	236	256	256	256	254	256	256	256	256	256	256	

9.4.2 Hierarchical Regression

The data was subject to assumption checking to ensure a hierarchical multiple regression analysis was appropriate. Eight assumptions were tested for each of the Dependent Variables (DVs; depression, anxiety, stress, perceived stress and trauma symptoms) and include:

1. The DV (mental health outcomes) was interval or ratio data.
2. Two or more Independent Variables (IV's), of which could be interval, ratio, ordinal or nominal. In this case, predictor variables were ratio or nominal (dichotomous only); polytomous categorical variables (children and living status) were re-coded into dummy variables.
3. Independence of observations should be evident to minimise interpretations of a predictor being significant when it is not. This was checked using Durbin-Watson statistic. There was independence of residuals, as assessed by a Durbin-Watson statistics of 1.958 for the depression total, 2.041 for the anxiety total, 1.858 for the stress total, 2.034 for the perceived stress total and 2.029 for the trauma checklist. Durbin-Watson statistics can range from 0 to 4, but a value of approximately 2 indicates no correlations between residuals. All of the above were very close to 2, so it can be accepted that there were no correlations between residuals and in turn passing this assumption.
4. The independent variables collectively and individually were linearly related to the dependent variable (yield a relatively straight line). Scatterplots were created to assess for collective linearity. The residuals somewhat reflected a horizontal band and therefore the relationship between the DVs (depression, anxiety, stress, perceived stress and trauma symptoms) and IVs were likely to be linear. Partial regression plots were conducted to establish if a linear relationship exists between the DV and each of the IV's; categorical variables not included. The partial regression plots showed approximate linear relationships between all but one IV and the DV depression; number of previous deployments. In this case, the relationship showed that as the DV rapidly decreased the IV increased. The DV was therefore subject to "square" transformation (simply squaring the DV) to achieve a linear relationship. This transformation adjusted the remaining plots for other IV's.

5. The data needed to show homoscedasticity of residuals (equal error variances). Visual inspection of a plot of studentized residuals versus unstandardized predicted values showed homoscedasticity (residual scatterplot roughly rectangular in shape).
6. The data must not have shown multicollinearity i.e. that two or more IV's were highly correlated with each other. Correlations showed that none of the IVs had correlations greater than 0.7 and all the Tolerance values from the coefficients are greater than 0.1 so confidence could be had that there was no problem with collinearity in this data.
7. There should have been no significant outliers, high leverage points or highly influential points. Case wise diagnostics showed no standardised residuals greater than +3 standard deviations. Studentized deleted residuals also showed no residuals greater than 3SDs or below -3SDs. Leverage points were inspected and the data showed no cases that have problematic leverage values (above 0.2). Value's for cook's distance were inspected to determine any cases that might be influential. There were no Cook's distance values above 1 (Cook and Weisberg, 1982) and so no highly influential points.
8. Residuals should be approximately normally distributed. The histogram, Normal Q-Q Plot and regression standardized residuals showed residuals are normally distributed. Points were not perfectly aligned; however, regression analysis is robust to small deviations from normality.

Model 4: Full Model plus Defence Mechanisms

When factors relating to defence mechanisms were entered into the hierarchical regression, the predictive utility of the model of each outcome was significantly improved. The predictor variables will be considered in turn dependent on their significance for each of the outcome variables.

Depression

Mature defence styles were statistically associated with lowered depression whereas immature defences were statistically associated with increased depression. The significant variables found in Model 4, as per Journal Paper, remained the same, though now, with the inclusion of defence mechanisms, the overall model for depression (R^2=.300, F(21, 980)=19.999, p=.000) accounted for 30% of the total variance of depression and is of a relatively medium effect size (Cohen, 1988).

Table 25 Multiple Regression for Depression, Model 5 only.

	Depression	
	Model 5	
Variable	B	β
(Constant)	24.552**	
Age	-.199**	-.206
Children	-.025	-.002
No children	.812	.048
Length of relationship	.194**	.169
Live together full-time	-.347	-.031
Live together part-time	.863	.043
Do no live together	.167	.005
Experienced trauma	.192	.052
Witnessed trauma	.098	.025
Rank	.622	.034
No. of previous deployments	-.033	-.017
Location of heightened tension	-1.013	-.030
Post- and pre-deployment	.256	.015
Pre-deployment	-1.361	-.048
On-deployment	1.446*	.080
Post-deployment	-1.545*	-.113
Attachment anxiety	1.123**	.137
Attachment avoidance	1.289**	.143
Mature Defences	-2.237**	-.261
Neurotic Defences	.228	.022
Immature Defences	1.555**	.129

** 0.01 * 0.05

Anxiety

Mature defence styles were statistically associated with lowered anxiety whereas neurotic and immature defences were statistically associated with increased anxiety. The significant variables found in Model 4, as per Journal Paper, remained the same, with the exception of attachment avoidance which no longer contributed significantly to the overall model. With the inclusion of defence mechanisms, the overall model was statistically significant in predicting anxiety (R^2=.224, F(21, 980)=13.504, p=.000). That is, the model accounts for 22.4% of the total variance explained of Anxiety and reflects a small to medium effect size (Cohen, 1988).

Table 26 Multiple Regression for Anxiety, Model 5 only.

	Anxiety	
	Model 5	
Variable	B	β
(Constant)	19.445**	
Age	-.135**	-.154
Children	-1.605	-.160
No children	-1.454	-.095
Length of relationship	.140**	.135
Live together full-time	1.375	.138
Live together part-time	2.198	.121
Do not live together	1.447	.044
Experienced trauma	.333**	.100
Witnessed trauma	-.132	-.037
Rank	.060	.004
No. of previous deployments	-.041	-.024
Location of heightened tension	-1.619	-.052
Post- and pre-deployment	.852	.056
Pre-deployment	.241	.009
On-deployment	.130	.008
Post-deployment	-1.296*	-.105
Attachment anxiety	1.055**	.143
Attachment avoidance	.534	.065
Mature Defences	-1.556**	-.200
Neurotic Defences	.961**	.100
Immature Defences	1.309**	.120

** 0.01 * 0.05

Stress

Mature defence styles were statistically associated with lowered stress whereas neurotic and immature defences were statistically associated with increased stress. The significant variables found in Model 4, as per Journal Paper, remained the same. With the inclusion of defence mechanisms, the overall model was statistically significant in predicting stress (R^2=.259, F(21, 980)=16.298, p=.000). That is, the model accounts for 25.9% of the total variance explained of stress and reflects a small to medium effect size (Cohen, 1988).

Table 27 Multiple Regression for Stress, Model 5 only.

	Stress	
	Model 5	
Variable	B	β
(Constant)	24.550**	
Age	-.193**	-.193
Children	-.239	-.021
No children	-.719	-.041
Length of relationship	.120*	.101
Live together full-time	.349	.031
Live together part-time	.677	.033
Do not live together	-.894	-.024
Experienced trauma	.284*	.074
Witnessed trauma	-.017	-.004
Rank	-.060	-.003
No. of previous deployments	-.022	-.011
Location of heightened tension	-1.295	-.036
Post- and pre-deployment	.237	.014
Pre-deployment	-.109	-.004
On-deployment	1.301	.069
Post-deployment	-1.707**	-.120
Attachment anxiety	1.592**	.188
Attachment avoidance	1.024**	.109
Mature Defences	-1.763**	-.198
Neurotic Defences	.852*	.078
Immature Defences	1.077*	.086

** 0.01 * 0.05

Perceived Stress

Mature defence styles were statistically associated with lowered perceived stress whereas neurotic and immature defences were statistically associated with increased perceived stress. The significant variables found in Model 4, as per Journal Paper, remained the same, with the exception of relationship length and attachment avoidance which no longer statistically contributed to the model. With the inclusion of defence mechanisms, the overall model was statistically significant in predicting perceived stress (R^2=.294, F(21, 980)=19.394, p=.000). That is, the model accounts for 29.4% of the total variance explained of perceived stress and reflects a small to medium effect size (Cohen, 1988).

Table 28 Multiple Regression for Perceived Stress, Model 5 only.

	Perceived Stress	
	Model 5	
Variable	B	β
(Constant)	19.512**	
Age	-.146**	-.182
Children	1.066	.116
No children	1.487	.106
Length of relationship	.048	.050
Live together full-time	-.957	-.105
Live together part-time	-1.151	-.069
Do not live together	-2.221	-.075
Experienced trauma	.284*	.093
Witnessed trauma	.125	.039
Rank	.362	.024
No. of previous deployments	-.024	-.015
Location of heightened tension	.512	.018
Post- and pre-deployment	.055	.004
Pre-deployment	-.880	-.037
On-deployment	.062	.004
Post-deployment	-1.428**	-.126
Attachment anxiety	.627*	.093
Attachment avoidance	.378	.050
Mature Defences	-2.040**	-.286
Neurotic Defences	.768**	.088
Immature Defences	1.817**	.182

** 0.01 * 0.05

Trauma Symptoms

Mature defence styles were statistically associated with lowered trauma symptoms whereas neurotic and immature defences were statistically associated with increased trauma symptoms. The significant variables found in Model 4, as per Journal Paper, remained the same. With the inclusion of defence mechanisms, the overall model was statistically significant in predicting trauma symptoms (R^2=.327, F(21, 980)=22.663, p=.000). That is, the model accounts for 32.7% of the total variance explained of trauma symptoms and reflects a small to medium effect size (Cohen, 1988).

Table 29 Multiple Regression for Trauma Symptoms, Model 5 only.

	Trauma Symptoms	
	Model 5	
Variable	B	β
(Constant)	16.497**	
Age	-.165**	-.101
Children	.864	.046
No children	-.220	-.008
Length of relationship	.161*	.083
Live together full-time	-1.017	-.054
Live together part-time	1.265	.037
Do not live together	-1.585	-.026
Experienced trauma	1.405**	.224
Witnessed trauma	-.164	-.025
Rank	-.240	-.008
No. of previous deployments	-.041	-.013
Location of heightened tension	-.503	-.009
Post- and pre-deployment	-.534	-.019
Pre-deployment	1.057	.022
On-deployment	-1.985	-.064
Post-deployment	-2.767**	-.119
Attachment anxiety	2.035**	.147
Attachment avoidance	2.877**	.188
Mature Defences	-1.880**	-.129
Neurotic Defences	2.291**	.128
Immature Defences	2.930**	.144

** 0.01 * 0.05

10. Discussion and Implications for Theory

The majority of military partners appear to employ more mature defence mechanisms, specifically humour, in response to coping; that is, military partners tend to hold healthy and conscious relationships with reality and even if this reality is not appreciated, it is accepted. It is thought that mature defence mechanisms enable the transformation of uncomfortable thoughts and feelings into less threatening forms rather than being suppressed (Davanloo, 1978; Have-de Labije & Neborsky, 2012). Of interest, the most common defence mechanisms military partners employ, after humour, include anticipation, suppression (mature), pseudo-altruism, reaction formation (neurotic) and rationalisation (immature). In line with the mental health outcomes found at each stage of deployment, alongside the challenges faced by military partners outlined by Pincus et al., (2001), the defence mechanisms can be interpreted accordingly.

Neurotic defence mechanisms were highest at the post- and pre-stage stage of deployment, namely pseudo-altruism and reaction formation. During this stage increased perceptions of stress were also evident. These results may provide support for the findings of Pincus et al., (2001) and it can be hypothesised that UK military partners employ such defences in attempts to minimise distress. In line with a psychodynamic perspective, military partners appear to deal with emotional conflict by dedicating themselves to meeting the needs of others i.e. partners or children, as well as overcompensating for unacceptable thoughts and feelings through sacrificing their own needs and desires. In response to the suppression of “unacceptable” thoughts and feelings, it is unsurprising that military partners perceive themselves as more stressed during stages of deployment where their military counterpart is still home, and when the threat to underlying feelings and emotions remain active. In addition, immature defence mechanisms were highest at the post-stage of deployment, mainly rationalisation, where lowered depression was also evident. According to psychodynamic theory, rationalisation is the use of logical and believable explanations for irrational behaviours that have been prompted by unconscious desires (Bateman & Holmes, 1995). Although this study has not directly explored what unhelpful coping behaviours might be evident in UK military partners, these results might offer some understanding and be applicable to previous US

research highlighting increased alcohol and substance use, and possible lowered distress in response to this, post-deployment (Ahmadi & Green, 2011; Blank et al., 2012; Erbes et al., 2017). In addition, and in line with the results highlighting an increase in attachment avoidance post-deployment, the use of rationalisation may be seen in the attempts of military partners to rationalise their inability to emotionally re-connect with their returning partner (Pincus et al., 2001).

Though the results indicate that there are no differences in defence mechanisms according to stage of deployment, suggesting psychodynamic principles offer limited understanding in the fluctuation of distress, it might be hypothesised that an inability to update defences according to separation and adversity has led to the increase in depression and stress during-deployment. Although humour is seen as a healthier way of coping, it remains a defence to underlying emotional conflicts. While humour at the pre-deployment stage might serve to temporarily alleviate the anxiety/depression/stress through the use of other avoidant strategies (self-sacrifice for the needs of others), this avoidance is not present during deployment leading to the maintenance and exacerbation of underlying emotions reinforcing distress during the deployment stage.

As would be expected, experiencing or witnessing trauma was significant in predicting distress in military partners. Inspection of the LEC suggested sources of trauma varied, though some were in relation to their partner and deployment. Although this limits the applicability of distress and trauma symptoms to experiences related to deployment, the results are in line with what would be expected in a female general adult population (McManus, Bebbington, Jenkins, & Brugha, 2014) and in turn increases the applicability of high levels of depression, anxiety and stress to factors specifically related to a military lifestyle.

In response to the factors included in the regression for this study, the total variance explained by these was relatively low. Although the results provide some evidence for the impact of military related lifestyle and deployment characteristics' impact on distress, the low variance explained might also suggest that there may be other factors not otherwise included. It is also worth considering that the time between

each stage of deployment stipulated in this study, may not be enough for differences in distress to be highlighted. Overall, however, in considering the multiple factors outlined earlier, the results confirm that UK military partners experience exacerbated mental health difficulties, above what would be expected in the general adult population, and is increasingly likely in response to exposure to a military lifestyle.

10.1 Other Risk Factors

In response to previous hypotheses that location of deployment may be a risk factor for increased distress (Everson et al., 2014; Faulk et al., 2012), the current study found that although those partners during the deployment stage were significantly more stressed and depressed, the location was less likely to be in an area of heightened tension. So, although not in line with previous evidence, the results provide an indication that it is unlikely to be the perception of danger that causes distress, but the actual separation itself.

When exploring the results in terms of gender, men reported moderate to severe levels of depression (n=5) and had been diagnosed with a mental health problem (n=3) but also reported not receiving treatment for this. It is difficult to generalise this given the low number of participants, but conclusions could be drawn to suggest future research would be important to explore specific risk factors related to the mental health of male military partners, such as the socially constructed view of males in society and psychological health (Diaz, 2015).

10.2 Implications for Clinical Practice

The results of this study provide strong evidence for the need of support services specifically tailored to the needs of military partners. High levels of distress have been found in this sample of UK military partners, which is known, in US samples, to impact on the health of service members and children (Lewis, Lamson, & Leseuer, 2012). Early assessment and ongoing interventions are therefore likely to be necessary to minimise the systemic impact this distress may have. Distress has also been found related to the deployment cycle in this sample of UK military partners, particularly during the deployed stage. The findings may implicate other populations

at risk of developing distress in response to actual separation, and in turn should be considered with regards to identification and treatment. As suggested in the aims of this study, timely interventions are therefore important not only for military partners but for financial implications of services too. Longitudinal research is, however, required to fully explore this in relation to a developmental trajectory and developmental patterns of distress.

This study supports previous findings (Eaton et al., 2008; Lincoln, Swift, & Shorteno-Fraser, 2008) and demonstrates elevated levels of distress and low levels of treatment-seeking in UK military partners. The use of mature defence mechanisms might suggest that military partners are restricted in pursuing help, though similar barriers as those found in previous research, might be evident for UK partners; for example, stigma surrounding treatment seeking and the concerns on how this might impact their military counterpart (Eaton et al., 2008; Gorman, Blow, Ames, & Reed, 2011; Warner, Appenzeller, Warner, & Grieger, 2009). Questions arise, and require further exploration, as to whether military partners simply don't want help: elevated distress has been found in this study, but the direct impact this has on functioning has not been explored and so may not directly translate to a need for services. On the other hand, limited insight into levels of distress, or even limited knowledge of what is available, might mean this sample is not coming to the attention of mental health services. It is acknowledged that some services ask whether individuals are affiliated with the military, though it is unknown whether this is used as a protected characteristic for reporting purposes of whether this directly impacts on priority treatment. Furthermore, Lewy et al., (2014) found that the majority of US military partners reported an inability to find a therapist who understands the specific needs of military partners. The results of this study therefore suggest that increasing the knowledge and understanding of not only military partners is important, but for clinicians likely to be working with them too.

Although it seems that UK military partners experience significant distress, perhaps the previous literature around posttraumatic growth, resilience and coping is relevant in explaining low treatment seeking behaviours, particularly as high levels of distress are still noted in individuals who feel they have benefited positively from adverse

experiences (Calhoun & Tedeschi, 2014). It could be argued that given the increased exposure to a military culture, such as deployments and separation, military partners have developed either a higher threshold for the impact of distress (Rutten et al., 2013), or in the face of ongoing challenges feel stronger as a person who may have "survived the worst", developed more positive relationships with their military counterpart or a changed sense of life's priorities (Calhoun & Tedeschi, 2014). The results provide a basis for beginning to understand the role of resilience in UK military partners; previous hypotheses around the role of positive emotions during the pre- and post-deployment stages may hold some credence in response to the lowered levels of distress found. Future research might focus on the building blocks of resilience in a UK military sample to understand its role in mental health. It might also be important to inform possible interventions for those finding it difficult to cope, or perhaps consideration as a preventative treatment particularly prior to deployment.

On a final note, the results of this study might also provide some understanding and possible ways of improving the high unemployment rates among military partners. Clinical depression is known to impact on an individual's ability to maintain employment (Lerner et al., 2004) and until interventions aimed at reducing the characteristics of depression and anxiety, employment remains a concern and a risk factor in the development of mental health problems in military partners.

10.3 Strengths and Limitations

In addition to the limitations around sample composition presented in the journal paper, it is important to highlight that the majority of the partners who took part in this survey were female and white British. Donkin et al., (2012) have found that female sex and English-speaking participants have been associated with a higher likelihood of consenting to online surveys exploring depression. So, although attempts were made to be inclusive, it is uncertain whether this sample accurately reflects the gender and cultural ratio of military partners, which in turn may limit the generalizability of this sample. Furthermore, as the Military partners within this study

all met criteria for depression, until qualitative accounts are gathered and analysed, it is unknown whether prior diagnosis of mental health difficulties contribute to sampling bias within this study which in turn limits opportunities to extrapolate the results.

Due to the variable attrition rates across the mental health measures, it could also be argued that the outcomes are limited in representing a true depiction of mental health, for example, more partners completed the DASS than the PCL-5. From feedback, the main reason for incomplete or non-response was the length of the survey and it is hypothesised that the school summer holidays may have impacted on time limitations in the desired sample. Conversely, the study provided an in-depth consideration of extenuating factors that could impact on mental health outcomes, aside from the military lifestyle.

In considering the results reported in the journal paper, around the low levels of mental health diagnosis among military counterparts, it is worth noting that self-reporting this information may be open to bias. Although it might be a true reflection, based on previous prevalence rates of PTSD in military personnel and veterans (Iversen et al., 2009; Sundin et al., 2010), discrepancies must be considered; it is possible that military partners' perception might be distorted or biased, it may also be that military personnel minimise mental health concerns to their partner (Murphy & Busuttil, 2014) or there may be a reluctance to report on their partners' mental health in relation to stigma, concern, or fears of how this might impact or reflect on their military counterpart (Eaton et al., 2008).

Qualitative elements were included in this study to provide brief structured recall when answering questions regarding their mental health and their partner's deployment, mainly in attempts to limit self-reporting bias. These questions were not mandatory, and so equally limited the ability to explore these thoroughly. As commonly associated with quantitative research, most of the mental health measures used have not been directly validated on military partners. Consideration is therefore warranted in interpreting the results. In hindsight, the DASS-21 could have been used at the sacrifice of minor reduced psychometric properties to shorten

the length of the questionnaire, which may in turn have reduced the number of non-completers.

The ECR-R was used to determine whether mental health outcomes are influenced by the types of attachment styles the participant reports. It is acknowledged that attachment styles may be fluid and changeable over time and so outcomes may or may not provide an accurate reflection of attachment styles. In addition, there is a risk of applying the questions of this measure to early attachments or someone else other than their partner who is/was/due to be deployed. This might impact on the ability to attribute attachment styles according to the stage of deployment, particularly when their partner is away and out of mind. Recent research has highlighted how corrective experiences may re-shape attachment styles (Berry & Danquah, 2016) and so results are interpreted in relation to current styles and only hypotheses and assumptions can be made regarding early attachments. In general, self-report measures investigating attachment styles have been criticised as it may be that only conscious attitudes towards relationships are being assessed meaning an inability to detect defences that may distort responses. The use of the DSQ-40, not only for assessing defence mechanisms, helped to account for this limitation.

The measurement of defence mechanisms has been a contentious issue in the literature. The construct and conceptualisation of defence mechanisms may contribute to the inability to create a methodologically and psychometrically sound self-report questionnaire to measure what are generally considered unconscious. In the original article of the DSQ-40, however, Andrews et al., (1993) argue that individuals are often aware of the resulting behaviours in reaction to the unconscious defence mechanisms, often inferring in hindsight why we act in certain ways and its relation to unconscious processes. Further, the authors believe that the habitual use of defence mechanisms are demonstrated in an individual's beliefs and attitudes, which are then seen as indicators of that particular defence. So, although the DSQ-40 has shown slightly less than favourable psychometric properties, it was considered appropriate to infer possible defences that might help explain mental health outcomes of this military partner sample.

The PCL-5 cut-off scores have been used variably across previous research and so provides criticism in response to a lack of consistent agreement as to the cut-off scores required to suggest individuals screen positively for trauma symptoms (Dobie et al., 2002; Weathers, Litz, et al., 2013; Wortmann et al., 2016). Some surveys have included a higher cut-off point (McManus et al., 2014), and so the results of this study are incomparable to other research, and could be interpreted quite differently depending on the cut-off used. For this study, the most recent evidence was used to determine the cut-off score that was used.

In addition to this being the first study of its kind, it includes the acknowledgement of positive factors associated with the military. Research has generally focussed on the negative impact of a military lifestyle, usually because distress is more commonly reported, though the inclusion of this might prove fruitful in further research exploring the impact of the military lifestyle on the mental health of UK military partners.

10.4 Recommendations for Future Research

It is possible that the emotional cycle of deployment, previously explored, may go some way in explaining the difficulties and challenges faced by partners of UK military personnel, though adaptations to account for practical differences such as differing lengths of deployment is likely to be necessary; fewer stages may be more appropriate and is likely to be a very individualised experience. Though this is not evidenced, it is hoped this research will provide a basis for more research investigating an emotional cycle of deployment for British Armed Forces partners.

It is hoped that this research will provide some basis for further exploration of resilience and coping in UK military partners, and whether these provide protective factors to the development and maintenance of psychological distress. Unhelpful coping behaviours might also be necessary to clarify the use of defence mechanisms and varied levels of distress found in this study. This type of research might allow consideration of effective treatment approaches and focus, which has already begun in the US (Saltzman et al., 2011); interventions cannot change the lifestyle associated with the military, but interventions aimed at increasing knowledge and understanding may go in some way of alleviating distress.

Evidently, US literature is much more advanced in highlighting specific reactions to the military lifestyle and deployment. The role of changing identities might provide further understanding of the specific underlying mechanisms to psychological distress. It is recommended that research continues to explore mental health of military partners, including the impact on physical health and the role of changing identities. More broadly, perhaps exploring societal attitudes or perceived attitudes in military partners will provide a further level of understanding other possible challenges faced by partners that have not been included here. In addition, qualitative enquiry might provide clarification between the high levels of distress but the low variance of these explained by factors included in this study. Perhaps inclusion of service users in developing interview schedules might provide other insights into difficulties and challenges faced specifically by UK military partners.

11. Reflections

I came to doing this project from my own personal experience. My fiancé (now husband) deployed to Afghanistan in October 2014, just as I had started the DClinPsy, not long after we had bought a house and not long after he had been promoted which meant relocation of base (living on camp mid-week and coming home on weekends). For me, this worked out well given that I knew there were going to be many hours spent essay writing and many hours requiring my full concentration. I did, however, wonder how other partners might cope. My thoughts and ideas around my project area was fully realised when I received a booklet through the door just before my other half was due to leave. A booklet providing information about how to look after my children (I don't have children) while my husband (we weren't married) was away. It wasn't until my other half said that those who are not married would not normally receive such information, but that he had requested it none the less. I felt angry, and shocked that this was the "support" that those left behind get (aside from the £20 gift card for 'Bella Italia' of which there are none where I live and only where my other half was based, many miles away). And so the project was created with feelings of passion, anger, motivation and a desire to attempt to make a difference in this support process.

From the beginning through the use of supervision I was aware that I would need to remain mindful of the topic area and its impact it may have on me personally. The main challenges appeared to arise from the development and recruitment process:

Ethically, we considered whether I should disclose that I am myself a military partner. This was mainly because at the time, a local military wife had received a death threat through her letter box from those purporting to be "ISIS". Therefore, we risk assessed the different decisions. Further, we reflected on how this might impact on those reading and potentially taking part in the survey. I thought that it was important to disclose this information about myself to ensure that those wanting to take part felt reassured that the survey was confidential and anonymous but also that being in similar shoes to them would create an element of trust. To ensure safety was incorporated into this decision, this information was only disclosed once individuals had met the screening criteria. I feel that by highlighting my position in the military

culture highlighted that I am in no way affiliated with the military, allowed my access to groups for recruitment purposes and also provided comfort prior to completing the survey.

Another early question was whether I would require Ministry of Defence consent. This created initial concerns that it would likely hold up the recruitment process but also if it did it would not be guaranteed. After investigating it turned out not to be the case. I did, however, have to be mindful about how helped in recruitment given I have a number of friends that are themselves employed by the military. My husband had offered to send emails on my behalf from his work, and so I had to balance my appreciation with ensuring this did not happen and so to ensure the survey stayed in the social realm.

Further barriers to recruitment included the lack of support I initially received from some support agencies and charities that were specifically developed to support the families of military personnel. I had no luck from hearing back from the majority of them until my husband sent my blurb to them. It was not until they recognised he was serving himself that they agreed to advertise my study. I noticed feelings of frustration and being annoyed that these are the services that are supposed to be there for those outside the military, and I wondered just how independent they actually are from the military, leading to further thoughts around just how little support there may be for partners of military personnel. A number of other charities and organisations, however, were extremely helpful, posting my survey in newsletters and on their Facebook pages, and so instilled hope and motivation.

Another challenge during the recruitment phase included my experience of being “trolled” from one particular disgruntled man on a military related forum. The comments that were made created feelings of anger, frustration and hurt at the misogynistic views and attitudes that still exist, but frustration that my professionalism overpowered and wouldn’t allow me to reply had I would of perhaps three years ago. On reflection, I wonder if these feelings were a reinforcement of my initial thoughts and feelings over whether I could do this topic area justice.

Further, as part of the recruitment process I joined a Facebook group, which is to specifically support partners of the UK forces. Recently, someone had posted about their significant mental health difficulties to which a number of people responded outlining their own difficulties. I found myself thinking I wanted to reply in some way, given my research, but feeling conflicted in knowing where my boundaries are and would I be posting as a military wife, a researcher, or a clinical psychologist. I have found this to be ever increasing as I veer towards qualifying. I decided not to post anything, and wait until the results of my study have been published so that I can share these with the group, of who many had filled in this survey.

During this phase of the project I also received a few personal messages from people who wished to express their own experiences to me knowing I was conducting research in the area. One particular story stuck with me. It was a man who was also serving in the military (meaning he was unable to complete the survey) who explained how he himself had experienced significant mental health difficulties when his female partner was deployed to Afghanistan. He talked about the added issues such as feeling emasculated and less of a man. I used supervision and my support networks, bearing in mind confidentiality, to talk about this in the context of my research, however, I couldn't help but feel sad, sorry that the exclusion criteria meant that he was unable to complete the survey, and angry that this is so unspoken of in society. It was then that I had already began to think about a next project and actually realise that those who are in couples where both are serving are likely to face unique and perhaps more challenging barriers and emotional difficulties.

I have become an advocate for military partners, and feel passionate about highlighting it is not just wives who are effected by deployment. The language that is used whenever military partners are mentioned continues to be wives, and there were ample times where I found myself correcting my friends, family and colleagues about the inclusivity of my research. I am aware that the military is its own institution and this study is unlikely to change the language so engrained in that culture. I do find comfort knowing that I have contributed to the evidence and at least starting to create a more inclusive way of thinking in this area. During this process, I was mindful of my own thoughts and feelings in relation to deployment. My husband had

been deployed to Afghanistan, however, when he returned, he did not live with me full time (only at weekends), and I feel this helped … it is only now when he has moved back home that I have noticed the difficulties that others have voiced.

During the analysis stage and the write up, the “doing it justice” thoughts and feelings remained. I had included lots of ideas in the survey, likely due to those problematic thoughts (which in hindsight was detrimental to sample retention), which was just not realistic for a DClinPsy project given the time restraints. I noticed feeling frustrated and worried about what all those who are and have experienced difficulties with deployments would think about the finished project. From this, I used supervision effectively and created a plan for future research and analysis that can be done on the data that I have. This has helped me feel reassured that the time and effort of those who completed will be justified and their voices will continue to be heard.

After completing the write up of this project, I feel that my epistemological position of my research has been challenged. Whilst I recognise the importance of pure quantitative data, specifically when impact research has not yet been conducted, I feel that my personal involvement in the study has created a keenness to hear people’s experiences. I particularly found that the qualitative answers (used as a structured anchor of thinking) almost necessitate a research project on their own. I feel that this area of research deserves and requires some qualitative research to compliment this study. I am excited for what the evidence base may hold for this area in the future and I am proud to be contributing the first published study of its kind.

12. References

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13. Appendices

Appendix 1 Survey

Q11 Please select which answer best applies to you. Please complete all questions.
Q12 Gender
- ❍ Male (1)
- ❍ Female (2)
- ❍ Prefer not to say (3)

Q17 What year were you born?
- ❍ 1900 (1)
- ❍ 1901 (2)
- ❍ 1902 (3)
- ❍ 1903 (4)
- ❍ 1904 (5)
- ❍ 1905 (6)
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- ❍ 1907 (8)
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- 2006 (107)

Q18 Ethnicity

- White English (1)
- White Welsh (2)
- White Scottish (3)
- White Northern Irish (4)
- White British (5)
- White Irish (6)
- White Gypsy or Irish Traveller (7)
- Any other White background (8)
- White and Black Caribbean (9)
- White and Black African (10)
- White and Asian (11)
- Any other Mixed/Multiple ethnic background (12)
- Indian (13)

- ❍ Pakistani (14)
- ❍ Bangladeshi (15)
- ❍ Chinese (16)
- ❍ Any other Asian/Asian British background (17)
- ❍ African (18)
- ❍ Caribbean (19)
- ❍ Any other Black/African/Caribbean/Black British background (20)
- ❍ Arab (21)
- ❍ Any other ethnic group (22)
- ❍ Prefer not to say (23)

Q20 What is the highest level of education you have completed?
- ❍ Less than High School (1)
- ❍ High School / GED (2)
- ❍ Some College (3)
- ❍ 2-year College Degree (4)
- ❍ 4-year College Degree (5)
- ❍ Masters Degree (6)
- ❍ Doctoral Degree (7)
- ❍ Professional Degree (8)
- ❍ Prefer not to say (9)

Q21 Marital Status
- ❍ Married (1)
- ❍ Civil partnership (2)
- ❍ Engaged (3)
- ❍ In a Relationship (4)
- ❍ Split up (5)
- ❍ Separated (6)
- ❍ Divorced (7)
- ❍ Widowed (8)

Q18 How many years have you been or were you in this relationship? Please round to the nearest year
- ❍ 1 (1)
- ❍ 2 (2)
- ❍ 3 (3)
- ❍ 4 (4)
- ❍ 5 (5)
- ❍ 6 (6)
- ❍ 7 (7)
- ❍ 8 (8)
- ❍ 9 (9)
- ❍ 10 (10)

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- 50 (50)
- 51 (51)
- 52 (52)
- 53 (53)

- ❍ 54 (54)
- ❍ 55 (55)
- ❍ 56 (56)
- ❍ 57 (57)
- ❍ 58 (58)
- ❍ 59 (59)
- ❍ 60 (60)
- ❍ 60+ (61)

Q20 Are you employed?
- ❍ No (1)
- ❍ Part-Time (2)
- ❍ Full-Time (3)
- ❍ Voluntary (4)
- ❍ Stay at home Parent (5)
- ❍ Prefer not to say (6)

Q22 Do / Did you live...
- ❍ On Base (1)
- ❍ Close to Base (Within 2 Miles) (2)
- ❍ Far from Base (More than 2 Miles) (3)

Q23 Do / Did you live...
- ❍ Close to family (Within 30 Miles) (1)
- ❍ Far from Family (More than 30 Miles) (2)

Q152 Do you have any children?
- ❍ Yes (1)
- ❍ No (2)
- ❍ Pregnant with first child (3)

Q25 How many children do you have?
- ❍ 1 (1)
- ❍ 2 (2)
- ❍ 3 (3)
- ❍ 4 (4)
- ❍ 5 (5)
- ❍ 6 (6)
- ❍ 7 (7)
- ❍ 8 (8)
- ❍ 9 (9)
- ❍ 10+ (10)

Q26 How many still live at home?
- ❍ 0 (1)

- ❍ 1 (2)
- ❍ 2 (3)
- ❍ 3 (4)
- ❍ 4 (5)
- ❍ 5 (6)
- ❍ 6 (7)
- ❍ 7 (8)
- ❍ 8 (9)
- ❍ 9 (10)
- ❍ 10+ (11)

Q27 How many are under 16 years old?
- ❍ 0 (1)
- ❍ 1 (2)
- ❍ 2 (3)
- ❍ 3 (4)
- ❍ 4 (5)
- ❍ 5 (6)
- ❍ 6 (7)
- ❍ 7 (8)
- ❍ 8 (9)
- ❍ 9 (10)
- ❍ 10+ (11)

Q151 Living Status
- ❍ Live together full time (1)
- ❍ Live together part time (e.g. at weekends or when your partner is on leave) (2)
- ❍ Do not live together (3)

Q24 What is / was the distance between your places of stay?
- ❍ Less than 2 miles apart (1)
- ❍ More than 2 miles apart (2)

Q29 Please select which answer best applies to your partner. Please complete all questions.

Q28 Gender
- ❍ Male (1)
- ❍ Female (2)
- ❍ Prefer not to say (3)

Q32 What year was your partner born?
- ❍ 1920 (1)
- ❍ 1921 (2)
- ❍ 1922 (3)

- 1923 (4)
- 1924 (5)
- 1925 (6)
- 1926 (7)
- 1927 (8)
- 1928 (9)
- 1929 (10)
- 1930 (11)
- 1931 (12)
- 1932 (13)
- 1933 (14)
- 1934 (15)
- 1935 (16)
- 1936 (17)
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- 1942 (23)
- 1943 (24)
- 1944 (25)
- 1945 (26)
- 1946 (27)
- 1947 (28)
- 1948 (29)
- 1949 (30)
- 1950 (31)
- 1951 (32)
- 1952 (33)
- 1953 (34)
- 1954 (35)
- 1955 (36)
- 1956 (37)
- 1957 (38)
- 1958 (39)
- 1959 (40)
- 1960 (41)
- 1961 (42)
- 1962 (43)
- 1963 (44)
- 1964 (45)
- 1965 (46)

- 1966 (47)
- 1967 (48)
- 1968 (49)
- 1969 (50)
- 1970 (51)
- 1971 (52)
- 1972 (53)
- 1973 (54)
- 1974 (55)
- 1975 (56)
- 1976 (57)
- 1977 (58)
- 1978 (59)
- 1979 (60)
- 1980 (61)
- 1981 (62)
- 1982 (63)
- 1983 (64)
- 1984 (65)
- 1985 (66)
- 1986 (67)
- 1987 (68)
- 1988 (69)
- 1989 (70)
- 1990 (71)
- 1991 (72)
- 1992 (73)
- 1993 (74)
- 1994 (75)
- 1995 (76)
- 1996 (77)
- 1997 (78)
- 1998 (79)
- 1999 (80)
- 2000 (81)

Q30 Ethnicity

- White English (1)
- White Welsh (2)
- White Scottish (3)
- White Northern Irish (4)
- White British (5)
- White Irish (6)
- White Gypsy or Irish Traveller (7)

- Any other White background (8)
- White and Black Caribbean (9)
- White and Black African (10)
- White and Asian (11)
- Any other Mixed/Multiple ethnic background (12)
- Indian (13)
- Pakistani (14)
- Bangladeshi (15)
- Chinese (16)
- Any other Asian/Asian British background (17)
- African (18)
- Caribbean (19)
- Any other Black/African/Caribbean/Black British background (20)
- Arab (21)
- Any other ethnic group (22)
- Prefer not to say (23)

Q31 In what Service branch is / was your partner employed?
- Royal Navy (1)
- Royal Marines (2)
- British Army (3)
- Royal Air Force (4)

Q33 What rank is / was your partner? Please scroll
- Royal Navy Able Rate (1)
- Royal Navy Leading Hand (1)
- Royal Navy Petty Officer (1)
- Royal Navy Chief Petty Officer (1)
- Royal Navy Warrant Officer 2 (1)
- Royal Navy Warrant Officer 1 (1)
- Royal Navy Midshipman (2)
- Royal Navy Sub Lieutenant (2)
- Royal Navy Lieutenant (2)
- Royal Navy Lieutenant Commander (2)
- Royal Navy Commander (2)
- Royal Navy Captain (2)
- Royal Navy Commodore (2)
- Royal Navy Rear Admiral (2)
- Royal Navy Vice Admiral (2)
- Royal Navy Admiral (2)
- ()
- Royal Marine Marine (1)
- Royal Marine Lance corporal (1)
- Royal Marine Corporal (1)

- Royal Marine Sergeant (1)
- Royal Marine Colour Sergeant (1)
- Royal Marine Warrant Officer 2 (1)
- Royal Marine Warrant Officer 1 (1)
- Royal Marine Second Lieutenant (2)
- Royal Marine Lieutenant (2)
- Royal Marine Captain (2)
- Royal Marine Major (2)
- Royal Marine Lieutenant Colonel (2)
- Royal Marine Colonel (2)
- Royal Marine Brigadier (2)
- Royal Marine Major General (2)
- Royal Marine Lieutenant General (2)
- Royal Marine General (2)
- ()
- ARMY Private (1)
- ARMY Lance Corporal (1)
- ARMY Corporal (1)
- ARMY Sergeant (1)
- ARMY Staff Sergeant (1)
- ARMY Warrant Officer 2 (1)
- ARMY Warrant Officer 1 (1)
- ARMY Second Lieutenant (2)
- ARMY Lieutenant (2)
- ARMY Captain (2)
- ARMY Major (2)
- ARMY Lieutenant Colonel (2)
- ARMY Colonel (2)
- ARMY Brigadier (2)
- ARMY Major General (2)
- ARMY Lieutenant General (2)
- ARMY General (2)
- ()
- RAF Aircraft Man (1)
- RAF Senior Aircraft Man (1)
- RAF Corporal (1)
- RAF Sergeant (1)
- RAF Flight Sergeant (1)
- RAF Warrant Officer (1)
- RAF Pilot Officer (2)
- RAF Flying Officer (2)
- RAF Flight Lieutenant (2)
- RAF Squadron Leader (2)

- ❍ RAF Wing Commander (2)
- ❍ RAF Group Captain (2)
- ❍ RAF Air Commodore (2)
- ❍ RAF Air Vice-Marshal (2)
- ❍ RAF Air Marshall (2)
- ❍ RAF Air Chief Marshall (2)

Q32 How many years has your partner served in the British Armed Forces?

- ❍ 1 (1)
- ❍ 2 (2)
- ❍ 3 (3)
- ❍ 4 (4)
- ❍ 5 (5)
- ❍ 6 (6)
- ❍ 7 (7)
- ❍ 8 (8)
- ❍ 9 (9)
- ❍ 10 (10)
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- ❍ 30 (30)
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- ❍ 32 (32)
- ❍ 33 (33)
- ❍ 34 (34)
- ❍ 35 (35)
- ❍ 36 (36)

- ❍ 37 (37)
- ❍ 38 (38)
- ❍ 39 (39)
- ❍ 40 (40)
- ❍ 41 (41)
- ❍ 42 (42)
- ❍ 43 (43)
- ❍ 44 (44)
- ❍ 45 (45)
- ❍ 46 (46)
- ❍ 47 (47)
- ❍ 48 (48)
- ❍ 49 (49)
- ❍ 50+ (50)

Q34 How many times has your partner been on deployment in the past 5 years? NOTE: Temporary deployment is sometimes referred to as detachment, assignment, tour, out of area). NOTE: For the purposes of this study, a temporary deployment is defined as any period of duty away from the permanent duty unit with the intent of being less than 183 days (still include those longer than 183 if it was an unplanned / unexpected extension).

- ❍ 1 (1)
- ❍ 2 (2)
- ❍ 3 (3)
- ❍ 4 (4)
- ❍ 5 (5)
- ❍ 6 (6)
- ❍ 7 (7)
- ❍ 8 (8)
- ❍ 9 (9)
- ❍ 10 (10)
- ❍ 11 (11)
- ❍ 12 (12)
- ❍ 13 (13)
- ❍ 14 (14)
- ❍ 15 (15)
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- ❍ 17 (17)
- ❍ 18 (18)
- ❍ 19 (19)
- ❍ 20 (20)
- ❍ 21 (21)
- ❍ 22 (22)

- ❍ 23 (23)
- ❍ 24 (24)
- ❍ 25 (25)
- ❍ 26 (26)
- ❍ 27 (27)
- ❍ 28 (28)
- ❍ 29 (29)
- ❍ 30+ (30)

Q35 Please list the locations of previous deployments in the past 5 years and corresponding months away (up to 7 months)

_____ 1 (1)
_____ 2 (2)
_____ 3 (3)
_____ 4 (4)
_____ 5 (5)
_____ 6 (6)
_____ 7 (7)
_____ 8 (8)
_____ 9 (9)
_____ 10 (10)
_____ 11 (11)
_____ 12 (12)
_____ 13 (13)
_____ 14 (14)
_____ 15 (15)
_____ 16 (16)
_____ 17 (17)
_____ 18 (18)
_____ 19 (19)
_____ 20 (20)

Q36 Please select which best describes your current situation:

- ❍ My partner has returned from deployment in the last 5 years and is due again in the next 12 months (1)
- ❍ My partner is due for deployment in the next 12 months (2)
- ❍ My partner has returned from deployment in the last 5 years (3)
- ❍ My partner is currently on deployment (4)

Q37 Please answer the following questions in relation to the most recent deployment your partner has RETURNED.

Q38 When did your partner return from their last deployment? (in months)

- ❍ 1 (1)
- ❍ 2 (2)
- ❍ 3 (3)
- ❍ 4 (4)

- 5 (5)
- 6 (6)
- 7 (7)
- 8 (8)
- 9 (9)
- 10 (10)
- 11 (11)
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- 41 (41)
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- 45 (45)
- 46 (46)
- 47 (47)

- ❍ 48 (48)
- ❍ 49 (49)
- ❍ 50 (50)
- ❍ 51 (51)
- ❍ 52 (52)
- ❍ 53 (53)
- ❍ 54 (54)
- ❍ 55 (55)
- ❍ 56 (56)
- ❍ 57 (57)
- ❍ 58 (58)
- ❍ 59 (59)
- ❍ 60 (60)

Q39 How long was your partner deployed for, in total months?
- ❍ 1 (1)
- ❍ 2 (2)
- ❍ 3 (3)
- ❍ 4 (4)
- ❍ 5 (5)
- ❍ 6 (6)
- ❍ 7 (7)
- ❍ 8 (8)
- ❍ 9 (9)
- ❍ 10 (10)

Q40 Was this deployment in an area of heightened tension?
- ❍ Yes (1)
- ❍ No (2)
- ❍ Don't Know (3)

Q41 If you feel comfortable, please specify location / city / continent of the deployment

Q42 How much contact did you have with your partner during this deployment?
- ❍ Every day (1)
- ❍ Every other day (2)
- ❍ Less than 3 times a week (3)
- ❍ None (4)

Q43 How much notice were you given prior to this deployment?
- ❍ More than 12 months notice (1)
- ❍ 6-12 months notice (2)
- ❍ 3-6 months notice (3)
- ❍ 1-3 months' notice (4)

❍ Less than 1 month’s notice (5)

Q44 Was this deployment extended?
❍ Yes (1)
❍ No (2)

Q50 How long was it extended for? (approximate months)
❍ 1 (1)
❍ 2 (2)
❍ 3 (3)
❍ 4 (4)
❍ 5 (5)
❍ 6 (6)
❍ 7 (7)
❍ 8 (8)
❍ 9 (9)
❍ 10 (10)
❍ 11 (11)
❍ 12 (12)

Q51 At what point of the deployment did you find out about the extension?
❍ At the beginning of the deployment (1)
❍ In the middle of the deployment (2)
❍ Towards the end of deployment (3)

Q45 Did your partner have R&R (Rest & Recuperation) leave to home?
❍ Yes (1)
❍ No (2)

Q52 How long was your partner's R&R for? (in days)
❍ 1 (1)
❍ 2 (2)
❍ 3 (3)
❍ 4 (4)
❍ 5 (5)
❍ 6 (6)
❍ 7 (7)
❍ 8 (8)
❍ 9 (9)
❍ 10 (10)
❍ 11 (11)
❍ 12 (12)
❍ 13 (13)
❍ 14 (14)

Q53 How long into the deployment was your partner's R&R?
- ❍ Close to the beginning of the deployment (1)
- ❍ Around the middle of the deployment (2)
- ❍ Close to the end of the deployment (3)

Q46 Did your partner have any PODL (Post-Operational Deployment Leave) or currently on PODL?
- ❍ Yes (1)
- ❍ No (2)

Q54 How much PODL did your partner take / has your partner taken? (in days)
- ❍ 1 (1)
- ❍ 2 (2)
- ❍ 3 (3)
- ❍ 4 (4)
- ❍ 5 (5)
- ❍ 6 (6)
- ❍ 7 (7)
- ❍ 8 (8)
- ❍ 9 (9)
- ❍ 10 (10)
- ❍ 11 (11)
- ❍ 12 (12)
- ❍ 13 (13)
- ❍ 14 (14)
- ❍ 15 (15)
- ❍ 16 (16)
- ❍ 17 (17)
- ❍ 18 (18)
- ❍ 19 (19)
- ❍ 20 (20)

Q47 How did you feel before your partner's deployment?

Q48 How did you feel during your partner's deployment?

Q49 How did you feel after your partner's deployment?

Q55 Now, please answer the following questions in relation to the deployment DUE in the next 12 months.

Q56 When do you anticipate your partner departing for this deployment? (in approximate months)
- ❍ 1 (1)
- ❍ 2 (2)
- ❍ 3 (3)

❍ 4 (4)
❍ 5 (5)
❍ 6 (6)
❍ 7 (7)
❍ 8 (8)
❍ 9 (9)
❍ 10 (10)
❍ 11 (11)
❍ 12 (12)

Q57 How long do you anticipate this deployment to last? (in months)
❍ 1 (1)
❍ 2 (2)
❍ 3 (3)
❍ 4 (4)
❍ 5 (5)
❍ 6 (6)
❍ 7 (7)

Q59 How much contact do you expect to have with your partner during this deployment?
❍ Every day (1)
❍ Every other day (2)
❍ Less than 3 times a week (3)
❍ None (4)
❍ Unsure (5)

Q60 How much notice have you been given for this deployment? (in approximate months)
❍ 1 (1)
❍ 2 (2)
❍ 3 (3)
❍ 4 (4)
❍ 5 (5)
❍ 6 (6)
❍ 7 (7)
❍ 8 (8)
❍ 9 (9)
❍ 10 (10)
❍ 11 (11)
❍ 12 (12)
❍ 13 (13)
❍ 14 (14)
❍ 15 (15)

- ❍ 16 (16)
- ❍ 17 (17)
- ❍ 18 (18)

Q58 Do you know where your partner is deployed to?
- ❍ Yes (1)
- ❍ No (2)

Q62 Will this be an area of heightened tension?
- ❍ Yes (1)
- ❍ No (2)
- ❍ Don't Know (3)

Q63 If you feel comfortable please specify location / city / continent

Q61 How do you feel about your partner's upcoming deployment?

Q64 Please answer the following questions in relation to the deployment due in the next 12 months.

Q66 When do you anticipate your partner departing for this deployment? (in approximate months)
- ❍ 1 (1)
- ❍ 2 (2)
- ❍ 3 (3)
- ❍ 4 (4)
- ❍ 5 (5)
- ❍ 6 (6)
- ❍ 7 (7)
- ❍ 8 (8)
- ❍ 9 (9)
- ❍ 10 (10)
- ❍ 11 (11)
- ❍ 12 (12)

Q68 How long do you anticipate this deployment to last? (in months)
- ❍ 1 (1)
- ❍ 2 (2)
- ❍ 3 (3)
- ❍ 4 (4)
- ❍ 5 (5)
- ❍ 6 (6)
- ❍ 7 (7)

Q70 Do you know where your partner is deployed to?

- ❍ Yes (1)
- ❍ No (2)
- ❍
- ❍
- ❍ Q74 How much contact do you expect to have with your partner during this deployment?
- ❍ Every day (1)
- ❍ Every other day (2)
- ❍ Less than 3 times a week (3)
- ❍ None (4)
- ❍ Unsure (5)

Q76 How much notice have you been given for this deployment? (in approximate months)
- ❍ 1 (1)
- ❍ 2 (2)
- ❍ 3 (3)
- ❍ 4 (4)
- ❍ 5 (5)
- ❍ 6 (6)
- ❍ 7 (7)
- ❍ 8 (8)
- ❍ 9 (9)
- ❍ 10 (10)
- ❍ 11 (11)
- ❍ 12 (12)
- ❍ 13 (13)
- ❍ 14 (14)
- ❍ 15 (15)
- ❍ 16 (16)
- ❍ 17 (17)
- ❍ 18 (18)

Q78 How do you feel about your partner's upcoming deployment?

Q77 Please answer the following questions in relation to the most recent deployment your partner has returned from.

Q74 When did your partner return from their last deployment? (in months)
- ❍ 1 (1)
- ❍ 2 (2)
- ❍ 3 (3)
- ❍ 4 (4)
- ❍ 5 (5)
- ❍ 6 (6)

- 7 (7)
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- 41 (41)
- 42 (42)
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- 48 (48)
- 49 (49)

- ❍ 50 (50)
- ❍ 51 (51)
- ❍ 52 (52)
- ❍ 53 (53)
- ❍ 54 (54)
- ❍ 55 (55)
- ❍ 56 (56)
- ❍ 57 (57)
- ❍ 58 (58)
- ❍ 59 (59)
- ❍ 60 (60)

Q76 How long was your partner deployed for, in total months?
- ❍ 1 (1)
- ❍ 2 (2)
- ❍ 3 (3)
- ❍ 4 (4)
- ❍ 5 (5)
- ❍ 6 (6)
- ❍ 7 (7)
- ❍ 8 (8)
- ❍ 9 (9)
- ❍ 10 (10)

Q78 Was this deployment in an area of heightened tension?
- ❍ Yes (1)
- ❍ No (2)
- ❍ Don't Know (3)

Q80 If you feel comfortable, please specify location / city / continent of the deployment

Q82 How much contact did you have with your partner during this deployment?
- ❍ Every day (1)
- ❍ Every other day (2)
- ❍ Less than 3 times a week (3)
- ❍ None (4)

Q84 How much notice were you given prior to this deployment?
- ❍ More than 12 months notice (1)
- ❍ 6-12 months notice (2)
- ❍ 3-6 months notice (3)
- ❍ 1-3 months' notice (4)
- ❍ Less than 1 month's notice (5)

Q86 Was this deployment extended?
- ❍ Yes (1)
- ❍ No (2)

Q86 How long was it extended for?
- ❍ 1 (1)
- ❍ 2 (2)
- ❍ 3 (3)
- ❍ 4 (4)
- ❍ 5 (5)
- ❍ 6 (6)
- ❍ 7 (7)
- ❍ 8 (8)
- ❍ 9 (9)
- ❍ 10 (10)
- ❍ 11 (11)
- ❍ 12 (12)

Q88 Did your partner have R&R (Rest & Recuperation) leave to home?
- ❍ Yes (1)
- ❍ No (2)

Q88 How long was your partner's R&R for? (in days)
- ❍ 1 (1)
- ❍ 2 (2)
- ❍ 3 (3)
- ❍ 4 (4)
- ❍ 5 (5)
- ❍ 6 (6)
- ❍ 7 (7)
- ❍ 8 (8)
- ❍ 9 (9)
- ❍ 10 (10)
- ❍ 11 (11)
- ❍ 12 (12)
- ❍ 13 (13)
- ❍ 14 (14)

Q90 How long into the deployment was your partner's R&R?
- ❍ Close to the beginning of the deployment (1)
- ❍ Around the middle of the deployment (2)
- ❍ Close to the end of the deployment (3)

Q90 Did your partner have any PODL (Post-Operational Deployment Leave) or currently on PODL?

- ❍ Yes (1)
- ❍ No (2)

Q92 How much PODL did your partner take / has your partner taken? (in days)
- ❍ 1 (1)
- ❍ 2 (2)
- ❍ 3 (3)
- ❍ 4 (4)
- ❍ 5 (5)
- ❍ 6 (6)
- ❍ 7 (7)
- ❍ 8 (8)
- ❍ 9 (9)
- ❍ 10 (10)
- ❍ 11 (11)
- ❍ 12 (12)
- ❍ 13 (13)
- ❍ 14 (14)
- ❍ 15 (15)
- ❍ 16 (16)
- ❍ 17 (17)
- ❍ 18 (18)
- ❍ 19 (19)
- ❍ 20 (20)

Q92 How did you feel before your partner's deployment?

Q94 How did you feel during your partner's deployment?

Q96 How did you feel after your partner's deployment?

Q93 How long are you expecting your partner to be away for? (in months)
- ❍ 1 (1)
- ❍ 2 (2)
- ❍ 3 (3)
- ❍ 4 (4)
- ❍ 5 (5)
- ❍ 6 (6)
- ❍ 7 (7)

Q94 How long has your partner been deployed for so far? (round to the nearest month)
- ❍ 1 (1)
- ❍ 2 (2)
- ❍ 3 (3)

- ❍ 4 (4)
- ❍ 5 (5)
- ❍ 6 (6)
- ❍ 7 (7)

Q96 How much contact did you expect to have with your partner during this deployment?
- ❍ Every day (1)
- ❍ Every other day (2)
- ❍ Less than 3 times a week (3)
- ❍ None (4)
- ❍ Unsure (5)

Q97 How much contact have you actually had with your partner so far?
- ❍ Every day (1)
- ❍ Every other day (2)
- ❍ Less than 3 times a week (3)
- ❍ None (4)

Q98 How much notice did you get prior to this deployment?
- ❍ More than 12 months notice (1)
- ❍ 6-12 months notice (2)
- ❍ 3-6 months notice (3)
- ❍ 1-3 months notice (4)
- ❍ Less than 1 month’s notice (5)

Q99 Is it possible this deployment may be extended?
- ❍ Yes (1)
- ❍ No (2)
- ❍ Don't Know (3)

Q153 Do you know where your partner is deployed to?
- ❍ Yes (1)
- ❍ No (2)

Q95 Is your partner deployed in an area of heightened contension?
- ❍ Yes (1)
- ❍ No (2)

Q103 If you feel comfortable, please specify location / city / continent of the deployment

Q100 Is you partner eligible for R&R (Rest & Recuperation) on this deployment?
- ❍ Yes (1)
- ❍ No (2)
- ❍ Don't Know (3)

Q104 How many days R&R is your partner eligible for?

- ❍ 1 (1)
- ❍ 2 (2)
- ❍ 3 (3)
- ❍ 4 (4)
- ❍ 5 (5)
- ❍ 6 (6)
- ❍ 7 (7)
- ❍ 8 (8)
- ❍ 9 (9)
- ❍ 10 (10)
- ❍ 11 (11)
- ❍ 12 (12)
- ❍ 13 (13)
- ❍ 14 (14)
- ❍ Dont Know (15)

Q105 Please select which best describes your partner's R&R

- ❍ You don’t know when your partner will be taking this (1)
- ❍ Your partner will be taking this in the first 3 months of their deployment (2)
- ❍ Your partner will be taking this in the middle of his deployment (3)
- ❍ You partner will be taking this in the last 3 months of their deployment (4)
- ❍ You partner is currently on R & R (5)

Q101 How do you feel now that your partner is on deployment?

Q106 Thank you for your participation so far. The following sections will be questions / statements about your life and how you feel or have felt in the past week / month.

Q102 Please read each statement and select the option which indicates how much the statement applied to you over the past week. Do not spend too much time on any statement. The rating scale is as follows: 0 Did not apply to me at all 1 Applied to me to some degree, or some of the time 2 Applied to me to a considerate degree, or a good part of the time 3 Applied to me very much, or most of the time

	Did not apply to me at all (1)	Applied to me to some degree, or some of the time (2)	Applied to me to a considerate degree, or a good part of the time (3)	Applied to me very much, or most of the time (4)
I found myself getting upset by quite trivial things (1)	❍	❍	❍	❍
I was aware of dryness of my mouth (2)	❍	❍	❍	❍
I couldn't seem to experience any positive feelings at all (3)	❍	❍	❍	❍
I experienced breathing difficulty (e.g. excessively rapid breathing, breathlessness in the absence of physical exertion) (4)	❍	❍	❍	❍
I just couldn't seem to get going (5)	❍	❍	❍	❍
I tended to over-react to situations (6)	❍	❍	❍	❍
I had a feeling of shakiness (e.g. legs going to give way) (7)	❍	❍	❍	❍
I found it difficult to relax (8)	❍	❍	❍	❍
I found myself in situations that made me so anxious I was	❍	❍	❍	❍

most relieved when they ended (9)				
I felt that I had nothing to look forward to (10)	❍	❍	❍	❍
I found myself getting upset rather easily (11)	❍	❍	❍	❍
I felt that I was using a lot of nervous energy (12)	❍	❍	❍	❍
I felt sad and depressed (13)	❍	❍	❍	❍
I found myself getting impatient when I was delayed in any way (e.g. lifts, traffic lights, being kept waiting) (14)	❍	❍	❍	❍
I had a feeling of faintness (15)	❍	❍	❍	❍
I felt that I had lot interest in just about everything (16)	❍	❍	❍	❍
I felt I wasn't worth much as a person (17)	❍	❍	❍	❍
I felt that I was rather touchy (18)	❍	❍	❍	❍
I perspired noticeably (e.g. hands sweaty) in the absence of high temperatures or physical exertion (19)	❍	❍	❍	❍
I felt scared without any good reason (20)	❍	❍	❍	❍

I felt that life wasn't worthwhile (21)	❍	❍	❍	❍
I found it hard to wind down (22)	❍	❍	❍	❍
I had difficulty in swallowing (23)	❍	❍	❍	❍
I couldn't seem to get any enjoyment out of the things I did (24)	❍	❍	❍	❍
I was aware of the action of my heart in the absence of physical exertion (e.g. sense of heart rate increase, heart missing a beat) (25)	❍	❍	❍	❍
I felt down-hearted and blue (26)	❍	❍	❍	❍
I found that I was very irritable (27)	❍	❍	❍	❍
I felt I was close to panic (28)	❍	❍	❍	❍
I found it hard to calm down after something upset me (29)	❍	❍	❍	❍
I feared that I would be "thrown" by some trivial but unfamiliar task (30)	❍	❍	❍	❍
I was unable to become enthusiastic about anything (31)	❍	❍	❍	❍
I found it difficult to tolerate interruptions to what I was doing (32)	❍	❍	❍	❍

I felt terrified (33)	❍	❍	❍	❍
I could see nothing in the future to be hopeful about (34)	❍	❍	❍	❍
I felt that life was meaningless (35)	❍	❍	❍	❍
I found myself getting agitated (36)	❍	❍	❍	❍
I was worried about situations in which I might panic and make a fool of myself (37)	❍	❍	❍	❍
I experienced trembling (e.g. in the hands) (38)	❍	❍	❍	❍
I found it difficult to work up the initiative to do things (39)	❍	❍	❍	❍

Q103 The next set of questions asks you about your feelings and thoughts during the last month. In each case, please select a the option which indicates how often you felt or thought a certain way. The rating scale is as follows: 0 Never 1 Almost Never 2 Sometimes 3 Fairly Often 4 Very Often

	Never (1)	Almost Never (2)	Sometimes (3)	Fairly Often (4)	Very Often (5)
In the last month, how often have you been upset because of something that happened unexpectedly? (1)	❍	❍	❍	❍	❍
In the last month, how often have you felt that you were unable to control the important things in your life? (2)	❍	❍	❍	❍	❍
In the last month, how often have you felt nervous and "stressed"? (3)	❍	❍	❍	❍	❍
In the last month, how often have you felt confident about your ability to handle your personal problems? (4)	❍	❍	❍	❍	❍
In the last month, how often have you felt that things were going your way? (5)	❍	❍	❍	❍	❍
In the last month, how	❍	❍	❍	❍	❍

often have you found that you could not cope with all the things that you had to do? (6)					
In the last month, how often have you been able to control irritations in your life? (7)	❍	❍	❍	❍	❍
In the last month, how often have you felt that you were on top of things? (8)	❍	❍	❍	❍	❍
In the last month, how often have you been angered because of things that were outside of your control? (9)	❍	❍	❍	❍	❍
In the last month, how often have you felt difficulties were piling up so high that you could not overcome them? (10)	❍	❍	❍	❍	❍

Q104 Listed below are a number of difficult or stressful things that sometimes happen to people and those around them. For each event, check one or more of the boxes to indicate that a) it happened to you personally b) you witnessed it happen to someone else c) you learned about it happening to someone close to you d) you were exposed to it as part of your job (e.g. paramedic, police etc.) e) you're not sure if it applies to you f) it does not apply to you Be sure to consider your entire life (growing up as well as adulthood) as you go through the list of events.

	Happened to me (1)	Witnessed it (2)	Learned about it (3)	Part of my job (4)	Not sure (5)	Does not apply (6)
Natural disaster (for example, flood, hurricane, tornado, earthquake) (1)	❑	❑	❑	❑	❑	❑
Fire or explosion (2)	❑	❑	❑	❑	❑	❑
Transportation accident (for example, car accident, boat accident, train wreck, plane crash) (3)	❑	❑	❑	❑	❑	❑
Serious accident at work, home, or during recreational activity (including your military partner) (4)	❑	❑	❑	❑	❑	❑
Exposure to toxic substance (for example, dangerous chemicals, radiation) (5)	❑	❑	❑	❑	❑	❑
Physical assault (for example, being attacked, hit, slapped,	❑	❑	❑	❑	❑	❑

kicked, beaten up) (6)						
Assault with a weapon (for example, being shot, stabbed, threatened with a knife, gun, bomb) (7)	❑	❑	❑	❑	❑	❑
Sexual assault (rape, attempted rape, made to perform any time of sexual act through force or threat of harm) (8)	❑	❑	❑	❑	❑	❑
Other unwanted or uncomfortable sexual experience (9)	❑	❑	❑	❑	❑	❑
Combat or exposure to a war-zone (in the military or as a civilian, and as a partner) (10)	❑	❑	❑	❑	❑	❑
Captivity (for example, being kidnapped, abducted, held hostage, prisoner of war) (11)	❑	❑	❑	❑	❑	❑
Life threatening illness or injury (12)	❑	❑	❑	❑	❑	❑
Severe human suffering (13)	❑	❑	❑	❑	❑	❑
Sudden violent death (for example,	❑	❑	❑	❑	❑	❑

homicide, suicide) (14)						
Sudden accidental death (15)	❑	❑	❑	❑	❑	❑
Serious injury, harm, or death you caused to someone else (16)	❑	❑	❑	❑	❑	❑
Any other very stressful event or experience (17)	❑	❑	❑	❑	❑	❑

Q105 If the question in relation to "any other very stressful event or experience" is applicable, briefly identify the event you were thinking of:

Q106 If you have experienced more than one of the events above, think about the event you consider the worst event, which for this questionnaire means the event that currently bothers you the most. If you have experienced only one of the events above, use that one as the worst event. Please answer the following questions about the worst event:

Q107 1. Briefly describe the worst event (for example, what happened, who was involved, etc.)

Q108 How long ago did it happen? (in approximate years)
- ❍ 1 (1)
- ❍ 2 (2)
- ❍ 3 (3)
- ❍ 4 (4)
- ❍ 5 (5)
- ❍ 6 (6)
- ❍ 7 (7)
- ❍ 8 (8)
- ❍ 9 (9)
- ❍ 10 (10)
- ❍ 11 (11)
- ❍ 12 (12)
- ❍ 13 (13)
- ❍ 14 (14)
- ❍ 15 + (15)

Q109 How did you experience it?
- ❍ It happened to me directly (1)
- ❍ I witnessed it (2)
- ❍ I learned about it happening to a close family member or close friend (3)
- ❍ I was repeatedly exposed to details about it (4)

Q110 Was someone's life in danger?
- ❍ Yes, my life (1)
- ❍ Yes, someone else's life (2)
- ❍ No (3)

Q111 Was someone seriously injured, or killed?
- ❍ Yes, I was seriously injured (1)
- ❍ Yes, someone else was seriously injured or killed (2)
- ❍ No (3)

Q112 Did it involve sexual violence?
- ❍ Yes (1)
- ❍ No (2)

Q113 If the event involved the death of a close family member or close friend, was it due to some kind of accident or violence, or was it due to natural causes?
- ❍ Accident or violence? (1)
- ❍ Natural causes (2)
- ❍ Not applicable (the event did not involve the death of a close family member or close friend) (3)

Q114 How many times altogether have you experienced a similar event as stressful or nearly as stressful as the worst event?
- ❍ Just once? (1)
- ❍ More than once? (2)

Q115 If more than once, please specify or estimate the total number of times you have had this experience

Q116 Please now complete the following questions, keeping in mind the previous worst event. Below is a list of problems and complaints that people sometimes have in response to stressful life experiences. Please read each one carefully an select an option which indicates how much you have been bothered by that problem in the last month. The rating scale is as follows: 1 Not at all 2 A little bit 3 Moderately 4 Quite a bit 5 Extremely

	Not at all (1)	A little bit (2)	Moderately (3)	Quite a bit (4)	Extremely (5)
Repeated, disturbing and unwanted memories, thoughts, or images of the stressful experience? (1)	❍	❍	❍	❍	❍
Repeated, disturbing dreams of the stressful experience? (2)	❍	❍	❍	❍	❍
Suddenly feeling or acting as if the stressful experience were actually happening again (as if you were actually back there reliving it)? (3)	❍	❍	❍	❍	❍
Feeling very upset when something reminded you of the stressful experience? (4)	❍	❍	❍	❍	❍
Having strong physical reactions (e.g., heart pounding, trouble breathing, or sweating) when something	❍	❍	❍	❍	❍

reminded you of the stressful experience? (5)					
Avoiding memories, thoughts, or feelings related to the stressful experience? (6)	❍	❍	❍	❍	❍
Avoiding external reminders of the stressful experience (for example, people, places, conversations, activities, objects, or situations)? (7)	❍	❍	❍	❍	❍
Trouble remembering important parts of the stressful experience? (8)	❍	❍	❍	❍	❍
Having strong negative beliefs about yourself, other people, or the world (for example, having thoughts such as: I am bad, there is something seriously wrong with me, no one can be trusted, the world is completely dangerous)? (9)	❍	❍	❍	❍	❍

Blaming yourself or someone else for the stressful experience or what happened after it? (10)	❍	❍	❍	❍	❍
Having strong negative feelings such as fear, horror, anger, guilt, or shame? (11)	❍	❍	❍	❍	❍
Loss of interest in activities that you used to enjoy? (12)	❍	❍	❍	❍	❍
Feeling distant or cut off from other people? (13)	❍	❍	❍	❍	❍
Trouble experiencing positive feelings (for example, being unable to feel happiness or have loving feelings for people close to you)? (14)	❍	❍	❍	❍	❍
Irritable behaviour, angry outbursts, or acting aggressively? (15)	❍	❍	❍	❍	❍
Taking too many risks or doing things that could cause you harm? (16)	❍	❍	❍	❍	❍
Being “super alert” or	❍	❍	❍	❍	❍

watchful or on guard? (17)					
Feeling jumpy or easily startled? (18)	❍	❍	❍	❍	❍
Having difficulty concentrating? (19)	❍	❍	❍	❍	❍
Trouble falling or staying asleep? (20)	❍	❍	❍	❍	❍

Q117 This questionnaire consists of a number of statements about personal attitudes. There are no right or wrong answers. Using the 9-point scale shown below, please indicate how much you agree or disagree with each statement by selecting one of the options on the scale beside the statement. The rating scale is as follows: 1 Strongly Disagree 2 Disagree 3 Moderately Disagree 4 Slightly Disagree 5 Neutral 6 Slightly Agree 7 Moderately Agree 8 Agree 9 Strongly Agree

	Strongly Disagree (1)	Disagree (2)	Moderately Disagree (3)	Slightly Disagree (4)	Neutral (5)	Slightly Agree (6)	Moderately Agree (7)	Agree (8)	Strongly Agree (9)
I get satisfaction from helping others and if this were taken away from me I would get depressed. (1)	❍	❍	❍	❍	❍	❍	❍	❍	❍
I am able to keep a problem out of my mind until I have time to deal with it. (2)	❍	❍	❍	❍	❍	❍	❍	❍	❍
I work out my anxiety through doing	❍	❍	❍	❍	❍	❍	❍	❍	❍

something constructive and creative like painting or wood-work. (3)									
I am able to find good reasons for everything I do. (4)	❍	❍	❍	❍	❍	❍	❍	❍	❍
I am able to laugh at myself pretty easily. (5)	❍	❍	❍	❍	❍	❍	❍	❍	❍
People tend to mistreat me. (6)	❍	❍	❍	❍	❍	❍	❍	❍	❍
If someone mugged me and stole my money, I'd rather he be helped than punished. (7)	❍	❍	❍	❍	❍	❍	❍	❍	❍
People say I tend to ignore unpleasant facts as if they don't exist. (8)	❍	❍	❍	❍	❍	❍	❍	❍	❍
I ignore danger as if I was superman. (9)	❍	❍	❍	❍	❍	❍	❍	❍	❍
I pride myself on my ability to cut	❍	❍	❍	❍	❍	❍	❍	❍	❍

people down to size. (10)									
I often act impulsively when something is bothering me. (11)	❍	❍	❍	❍	❍	❍	❍	❍	❍
I get physically ill when things aren't going well for me. (12)	❍	❍	❍	❍	❍	❍	❍	❍	❍
I'm a very inhibited person. (13)	❍	❍	❍	❍	❍	❍	❍	❍	❍
I get more satisfaction from my fantasies than from my real life. (14)	❍	❍	❍	❍	❍	❍	❍	❍	❍
I have special talents that allow me to go through life with no problems. (15)	❍	❍	❍	❍	❍	❍	❍	❍	❍
There are always good reasons when things don't work out for me. (16)	❍	❍	❍	❍	❍	❍	❍	❍	❍
I work more things out in my daydream	❍	❍	❍	❍	❍	❍	❍	❍	❍

s than in my real life. (17)									
I fear nothing. (18)	❍	❍	❍	❍	❍	❍	❍	❍	❍
Sometimes I think I'm an angel and other times I think I'm a devil. (19)	❍	❍	❍	❍	❍	❍	❍	❍	❍
I get openly aggressive when I feel hurt. (20)	❍	❍	❍	❍	❍	❍	❍	❍	❍
I always feel that someone I know is like a guardian angel. (21)	❍	❍	❍	❍	❍	❍	❍	❍	❍
As far as I'm concerned, people are either good or bad. (22)	❍	❍	❍	❍	❍	❍	❍	❍	❍
If my boss bugged me, I might make a mistake in my work or work more slow so as to get back at him. (23)	❍	❍	❍	❍	❍	❍	❍	❍	❍
There is someone I know who can do	❍	❍	❍	❍	❍	❍	❍	❍	❍

anything and who is absolutely fair and just. (24)									
I can keep the lid on my feelings if letting them out would interfere with what I'm doing. (25)	❍	❍	❍	❍	❍	❍	❍	❍	❍
I'm usually able to see the funny side of an otherwise painful predicament. (26)	❍	❍	❍	❍	❍	❍	❍	❍	❍
I get a headache when I have to do something I don't like. (27)	❍	❍	❍	❍	❍	❍	❍	❍	❍
I often find myself being very nice to people who by all rights I should be angry at. (28)	❍	❍	❍	❍	❍	❍	❍	❍	❍
I am sure I get a raw deal from life. (29)	❍	❍	❍	❍	❍	❍	❍	❍	❍
When I have to face a difficult situation I	❍	❍	❍	❍	❍	❍	❍	❍	❍

try to imagine what it will be like and plan ways to cope with it. (30)									
Doctors never really understand what is wrong with me. (31)	❍	❍	❍	❍	❍	❍	❍	❍	❍
After I fight for my rights, I tend to apologise for my assertiveness. (32)	❍	❍	❍	❍	❍	❍	❍	❍	❍
When I'm depressed or anxious, eating makes me feel better. (33)	❍	❍	❍	❍	❍	❍	❍	❍	❍
I'm often told that I don't show my feelings. (34)	❍	❍	❍	❍	❍	❍	❍	❍	❍
If I can predict that I'm going to be sad ahead of time, I can cope better. (35)	❍	❍	❍	❍	❍	❍	❍	❍	❍
No matter how much I complain,	❍	❍	❍	❍	❍	❍	❍	❍	❍

I never get a satisfactory response. (36)									
Often I find that I don't feel anything when the situation would seem to warrant strong emotions. (37)	❍	❍	❍	❍	❍	❍	❍	❍	❍
Sticking to the task at hand keeps me from feeling depressed or anxious. (38)	❍	❍	❍	❍	❍	❍	❍	❍	❍
If I were in a crisis, I would seek out another person who had the same problem. (39)	❍	❍	❍	❍	❍	❍	❍	❍	❍
If I have an aggressive thought, I feel the need to do something to compensate for it. (40)	❍	❍	❍	❍	❍	❍	❍	❍	❍

Q118 The statements below concern how you feel in emotionally intimate relationships. We are interested in how you generally experience relationships, not just in what is happening in a current relationship. Respond to each statement by selecting to indicate how much you agree or disagree with the statement. The rating scale is as follows: Strongly Disagree Moderately Disagree Slightly Disagree Neutral Slightly Agree Moderately Agree Strongly Agree

	Strongly Disagree (1)	Moderately Disagree (2)	Slightly Disagree (3)	Neutral (4)	Slightly Agree (5)	Moderately Agree (6)	Strongly Agree (7)
I'm afraid that I will lose my partner's love. (1) (1)	❍	❍	❍	❍	❍	❍	❍
It makes me mad that I don't get the affection and support I need from my partner. (16) (2)	❍	❍	❍	❍	❍	❍	❍
I feel comfortable sharing my private thoughts and feelings with my partner. (20) (3)	❍	❍	❍	❍	❍	❍	❍
I talk things over with my partner. (31) (4)	❍	❍	❍	❍	❍	❍	❍
My partner really understands me and my needs. (36) (5)	❍	❍	❍	❍	❍	❍	❍
I worry that romantic partners won’t care about me as much as I care about them. (4) (6)	❍	❍	❍	❍	❍	❍	❍
When I show my feelings for romantic	❍	❍	❍	❍	❍	❍	❍

partners, I'm afraid they will not feel the same about me. (8) (7)							
I'm afraid that once a romantic partner gets to know me, he or she won't like who I really am. (15) (8)	❍	❍	❍	❍	❍	❍	❍
I don't feel comfortable opening up to romantic partners. (23) (9)	❍	❍	❍	❍	❍	❍	❍
It helps to turn to my romantic partner in times of need. (29) (10)	❍	❍	❍	❍	❍	❍	❍
It's easy for me to be affectionate with my partner. (35) (11)	❍	❍	❍	❍	❍	❍	❍
I often worry that my partner doesn't really love me. (3) (12)	❍	❍	❍	❍	❍	❍	❍
I rarely worry about my partner leaving me. (9) (13)	❍	❍	❍	❍	❍	❍	❍
I find it easy to depend on romantic partners. (34) (14)	❍	❍	❍	❍	❍	❍	❍

I find it relatively easy to get close to my partner. (26) (15)	❍	❍	❍	❍	❍	❍	❍
I prefer not to show a partner how I feel deep down. (19) (16)	❍	❍	❍	❍	❍	❍	❍
My romantic partner makes me doubt myself. (10) (17)	❍	❍	❍	❍	❍	❍	❍
I tell my partner just about everything. (30) (18)	❍	❍	❍	❍	❍	❍	❍
I get uncomfortable when a romantic partner wants to be very close. (25) (19)	❍	❍	❍	❍	❍	❍	❍
My partner only seems to notice me when I'm angry. (18) (20)	❍	❍	❍	❍	❍	❍	❍
I do not often worry about being abandoned. (11) (21)	❍	❍	❍	❍	❍	❍	❍
I often worry that my partner will not want to stay with me. (2) (22)	❍	❍	❍	❍	❍	❍	❍
I am nervous when partners get too close to	❍	❍	❍	❍	❍	❍	❍

me. (32) (23)							
I prefer not to be too close to romantic partners. (24) (24)	❍	❍	❍	❍	❍	❍	❍
I often wish that my partner's feelings for me were as strong as my feelings for him or her. (5) (25)	❍	❍	❍	❍	❍	❍	❍
My desire to be very close sometimes scares people away. (14) (26)	❍	❍	❍	❍	❍	❍	❍
I worry that I won't measure up to other people. (17) (27)	❍	❍	❍	❍	❍	❍	❍
I usually discuss my problems and concerns with my partner. (28) (28)	❍	❍	❍	❍	❍	❍	❍
It's not difficult for me to get close to my partner. (27) (29)	❍	❍	❍	❍	❍	❍	❍
Sometimes romantic partners change their feelings about me for no apparent reason. (13) (30)	❍	❍	❍	❍	❍	❍	❍

I find that my partner(s) don't want to get as close as I would like. (12) (31)	❍	❍	❍	❍	❍	❍	❍
I worry a lot about my relationships. (6) (32)	❍	❍	❍	❍	❍	❍	❍
I find it difficult to allow myself to depend on romantic partners. (21) (33)	❍	❍	❍	❍	❍	❍	❍
I feel comfortable depending on romantic partners. (33) (34)	❍	❍	❍	❍	❍	❍	❍
When my partner is out of sight, I worry that he or she might become interested in someone else. (7) (35)	❍	❍	❍	❍	❍	❍	❍
I am very comfortable being close to romantic partners. (22) (36)	❍	❍	❍	❍	❍	❍	❍

Q119 Have you been diagnosed with a mental health problem? e.g. depression or anxiety Note: If you have been diagnosed with more than one mental health problem please tell us about your most prominent difficulty.

❍ Yes (1)

❍ No (2)

❍ Prefer not to say (3)

Q121 What mental health problem have you been diagnosed with?

Q122 When were you diagnosed? mm/yy

Q123 Are you taking medication for this?
- ❍ Yes (1)
- ❍ No (2)

Q124 Are you having any other forms of treatment for this? e.g. psychotherapy
- ❍ Yes (1)
- ❍ No (2)
- ❍ Prefer not to say (3)

Q126 If yes, please briefly describe below

Q120 Has your partner been diagnosed with a mental health problem in the past five years? Note: If your partner has been diagnosed with more than one mental health problem, please tell us about the most prominent difficulty.
- ❍ Yes (1)
- ❍ No (2)
- ❍ Prefer not to say (3)

Q127 What mental health problem has/was your partner been diagnosed with?

Q128 Does your partner still have this mental health problem?
- ❍ Yes (1)
- ❍ No (2)

Q129 When was your partner diagnosed? mm/yy

Q130 Is or has your partner received any forms of treatment for this mental health problem? e.g. medication / psychotherapy
- ❍ Yes (1)
- ❍ No (2)
- ❍ Prefer not to say (3)

Q131 If yes, please briefly describe below

Q132 On a scale of 1 to 5 (with 1 being 'Not at All' and 5 being 'Extremely', please indicate how much you feel deployment impacts on your health and wellbeing (mentally and physically) at each of the following stages:

Q133 Click to write the question text

	1 - Not at all (1)	2 - Slightly (2)	3 - Moderately (3)	4 - Very (4)	5 - Extremely (5)
How much do you feel your partner's deployment impacts on your health	❍	❍	❍	❍	❍

and wellbeing BEFORE they leave? (1)					
How much do you feel your partner's deployment impacts on your health and wellbeing DURING their deployment? (2)	❍	❍	❍	❍	❍
How much do you feel your partner's deployment impacts on your health and wellbeing on their RETURN? (3)	❍	❍	❍	❍	❍
Overall, how much do you feel deployment impacts on your health and wellbeing ingeneral? (4)	❍	❍	❍	❍	❍

Q134 Please use the box below if you wish to add anything to the question about the time before your partner leaves for deployment

Q135 Please use the box below if you wish to add anything to the question about the time during your partner's deployment

Q136 Please use the box below if you wish to add anything to the question about the time following your partner's deployment

Q137 Please describe how you cope with the impact on you, BEFORE your partner is deployed

Q138 Please describe how you cope with the impact on you, DURING your partner's deployment

Q139 Please describe how you cope with the impact on you, AFTER your partner's deployment

Q140 Do you think your role changes at any point of your partner's deployment?
- ❍ Yes (1)
- ❍ No (2)

Q141 Please could you expand on this further using one, two or all of the boxes below

Q142 How do you feel your role changes prior to your partner's deployment?

Q143 How do you feel your role changes during your partner's deployment?

Q144 How do you feel your role changes following your partner's deployment?

Q145 Finally, it may be important for us to know about the impact of deployment on you, in your own words. Please use the box below to describe this and then click next...

Appendix 2 Online Consent Form

Q6 Please find below an online consent declaration. Please read carefully.

Title of Study: The impact of deployment on the mental health of military partners.

RECref:PSY1516134

1. I confirm that I have read and understand the information given for the above study and have had the opportunity to ask questions.

2. I understand that my participation is voluntary and that I am free to withdraw at any time up to four weeks after completing the questionnaire, without giving any reason, and without my legal rights being affected.

3. I understand that authorised individuals may look at data collected in the study from the University of Lincoln and Nottingham, the research group and regulatory authorities where it is relevant to my taking part in this study. I give permission for these individuals to have access to these records and to collect, store, analyse and publish information obtained from my participation in this study. I understand that my personal details will be kept confidential.

- ❍ Having read the above I agree to take part in this study (1)
- ❍ Having read the above I do not agree to take part in this study (2)

Q8 Please answer the screening questions below to determine whether you are eligible to take part in this study.

Q9 ARE YOU SERVING IN THE BRITISH ARMED FORCES?

- ❍ Yes (1)
- ❍ No (2)

Q10 ARE YOU THE PARTNER OF SOMEONE WHO HAS PREVIOUSLY SERVED IN THE BRITISH ARMED FORCES? Or,ARE YOU THE PARTNER OF SOMEONE CURRENTLY SERVING IN THE BRITISH ARMED FORCES? Or, ARE YOU AN EX-PARTNER OF SOMEONE WHO SERVED IN THE BRITISH ARMED FORCES WHEN YOU WERE IN A RELATIONSHIP WITH THEM?

- ❍ Yes (1)
- ❍ No (2)

Q8 IS YOUR PARTNER EITHER DUE (IN THE NEXT 12 MONTHS), CURRENTLY ON, OR RETURNED (WITHIN THE PAST FIVE YEARS) FROM A TEMPORARY DEPLOYMENT? IF AN EX-PARTNER, WERE YOU IN A RELATIONSHIP WITH THEM AT THE TIME OF THEIR CURRENT OR THEIR RETURNED (WITHIN THE PAST FIVE YEARS) TEMPORARY DEPLOYMENT?

NOTE: Temporary Deployment is sometimes referred to as detachment, assignment, tour, out of area). NOTE: For the purposes of this study, a temporary deployment is defined as any period of duty away from the permanent duty unit with the intent of being less than 183 days (still include those longer than 183 if it was an unplanned / unexpected extension).

- ❍ Yes (1)
- ❍ No (2)

Q10 Thank you. This survey will continue once you click below. You can return at any time to complete the survey using the same link. I would like to remind you that because I am not only a researcher, but also a partner of a member of the British Armed Forces I understand the importance of anonymity and confidentiality. I hope you find reassurance in that I will not ask any questions that might jeopardise either you or your partner/family in any way. I would like to take this opportunity to thank you again for agreeing to take part in this research.

Appendix 3 More Information

Title of Study: The impact of deployment (sometimes referred to as a detachment, an assignment, a tour, or an out of area) on the mental health of military partners.

Name of Researcher(s): Charlene Bennett, Dr Rachel Sabin-Farrell and Prof Nigel Hunt. Field Supervisor: Dr Deborah Kingston.

What is the purpose of the study?

The purpose of this research is to explore the impact of deployment (sometimes referred to as detachment, assignment, tour or out of area) on the health of military partners, to determine whether military partners face certain problems and provide a foundation to encourage further research in this area.

Why have I been invited?

You are being invited to take part because you have a (ex-)partner who is currently serving or has previously served in the British Armed Forces and they are due for, are on, or have been on a deployment. We are inviting as many participants as possible that are in a similar situation to you to take part.

Do I have to take part?

It is up to you to decide whether or not to take part. If you do decide to take part you will be asked to confirm your agreement to take part via the online consent declaration. If you decide to take part you are still free to withdraw your data up to four weeks after the date you completed the survey and without giving reason.

What will happen to me if I take part?

You will complete the online survey, which may take up to 60 minutes and which can be completed anytime and anywhere you will have access to the Internet. You will also be asked if you would like to be contacted about any future research in this area. This is all that will be required of you for this research.

You will be given your own personal ID to make sure your response is anonymous but enables you to contact the researcher in the future for queries or withdrawal.

If you would like, on completion of the study, the results and final write up can be sent to you via an email address.

Expenses and payments

In completing these questionnaires, there will be no financial implications to you as a participant and therefore an inconvenience allowance is not appropriate.

You will, however, have the opportunity to be entered in to a prize draw to win one of four £25 M&S gift vouchers, if you take part.

What are the possible disadvantages and risks of taking part?

It is acknowledged that the questions being asked might cause some discomfort due to the difficulties you may be experiencing or may have experienced. It is therefore important for you to be mindful of your feelings and keep in mind the voluntary nature of the research. You can stop the survey at any point but there will be a debrief page at the end of the survey offering advice on how you can seek support should you become distressed. There are possible benefits of taking part too (please see below).

What are the possible benefits of taking part?

We cannot promise the study will help you individually, however, this survey may provide the opportunity for you to express the impact deployment has or has had on you as a military partner and also help you feel listened to. The information we get from this study may help to recognise an under-researched population and identify whether there is a need for specific health services for partners of military personnel.

What happens when the research study stops?

Once you have submitted your data, you will be presented with a debrief page. Once the period of data collection ends (window of approximately 6 months) the researcher will analyse the data. You won't be required to do anything. Remember, you can withdraw your data up to four weeks after the date you completed the questionnaire.

What if there is a problem?

If you have a concern about any aspect of this study, you should speak to the researchers who will do their best to answer your questions. The researcher's contact details are given at the end of this information sheet. If you remain unhappy and wish to complain formally, you can do this by contacting the School of Psychology at the University of Lincoln.

Will my taking part in the study be kept confidential?

We will follow ethical and legal practice and all information about you will be handled in confidence. All information that is collected from you during the course of the research will be kept **strictly confidential** on a password-protected database. Your information will only have your unique ID on so you cannot be recognised from it.
If you agree to take part, authorised persons from the University of Lincoln and Nottingham who are organising and overseeing the research will look at some parts of the data collected. All persons will have a duty of confidentiality to you as a research participant.

At the end of this survey, you will be asked if you would like to be contacted in the future about other research and/or follow up studies you may be interested in taking part in. If you agree to this, your email address will remain on a secure database that only the researchers have access to. From time to time you will be contacted to see if you wish to remain on this database and you can request to be removed from this database at any time.

If you decide not to be kept on this database, but would still like to know the outcomes of this study, your email address will be kept until it is possible to send you this information. Once you have received this via email, you will be asked again whether you will like to remain on our database. If you decide not to, your email address will be deleted from our database and you will receive no further communications from the research team.

All other research data will be kept securely for 7 years. After this time your data will be disposed of securely. During this time all precautions will be taken by all those involved to maintain your confidentiality, only members of the research team will have access to your personal data.

What will happen if I don't want to carry on with the study?

Your participation is voluntary and you are free to withdraw at any time during completion of the online questionnaire and up to four weeks post completion, without giving any reason, and without your legal rights being affected. If you withdraw, then your responses will be deleted, not be used in the final analysis and you will not receive any further communication from the research team, unless you contact us first.

What will happen to the results of the research study?

The results of the research will be contained within a written educational piece of work as part of the doctoral training programme in Clinical Psychology. It is likely the research will be submitted to a peer-reviewed journal related to military and mental health research as well as reported on at relevant conferences. As the same throughout the research, you will not be identified in any report or publication.

Who is organising and funding the research?

This research is being organised and funded jointly by the University of Lincoln and the University of Nottingham.

Who has reviewed the study?

All research conducted as part of a University course is looked at by an independent group, called a Research Ethics Committee, to protect your interests. Queries about ethics should be directed to soprec@lincoln.ac.uk

Further information and contact details

In the first instance, please contact
Charlene Bennett
Trainee Clinical Psychologist
14498797@students.lincoln.ac.uk

Supervisor:
Dr Rachel Sabin-Farrell
Senior Academic Tutor & Supervisor
Rachel.sabin-farrell@nottingham.ac.uk

Appendix 4 Debrief

Thank you for taking part in this survey. If you wish to do so, you can print your responses including the information regarding this study. If you feel upset after having completed the study or find that some questions or aspects of the study triggered distress, talking with a qualified clinician may help. If you feel you would like assistance please contact your GP. Please also find below some websites and contact details you may find useful. www.bigwhitewall.com www.combatstress.org.uk

If you are feeling really down and perhaps even suicidal, then please ring the Samaritans on 08457 90 90 90 who are there 24 hours a day, 365 days a year. As a reminder, your participation is entirely voluntary and you are free to withdraw four weeks from now without giving any reason, and without your legal rights being affected. If you withdraw then your questionnaire will be deleted and not be used in the final analysis. You will therefore not receive any further communication from us unless you contact us first. Please contact those listed below should you wish to withdraw, quoting your unique ID number you have been given. Please do not hesitate to contact us with any questions you may have. Charlene Bennett – 14498797@students.lincoln.ac.uk Supervisor: Dr Rachel Sabin-Farrell - rachel.sabin-farrell@nottingham.ac.uk

Appendix 5 Ethical Approval
Email Communication

Application for ethical approval - PSY1516134

Dear Charlene

This is to confirm that your application for ethical approval was conditionally approved, pending the following amendments:

- The information sheet needs to say that the study is a joint one with University of Nottingham and University of Lincoln
- Queries about ethics should be directed to soprec@lincoln.ac.uk

Your supervisor can approve / make the relevant changes, there is no need to resubmit

Kind regards

Soprec

School of Psychology Research Ethics Committee
SOPREC
College of Social Science
University of Lincoln, Brayford Pool, Lincoln, Lincolnshire, LN6 7TS
Email – soprec@lincoln.ac.uk

The Mental Health of UK Military Partners…

…and the variability between stage of deployment.

Charlene Bennett[1], Dr. Rachel Sabin-Farrell[2], Prof. Nigel Hunt[3], Dr. Nima Moghaddam[2]

[1]University of Lincoln [2]University of Nottingham and Lincoln [3]University of Nottingham

Background

The psychological impact of deployment on military personnel and veterans is well documented in both UK and US literature and the impact on children has also been identified. The psychological impact on military partners is less known.

Military partners have been described as *"the overlooked casualties of war"* (Mansfield et al., 2010). Research that does exist comes from the United States and is generally restricted to wives of military husbands; there is currently no UK research.

None-the-less, the research has suggested the impact of deployment on psychological health of partners is the same, if not worse, than on those actually deployed. High rates of depression, anxiety, sleep disorders, stress and stress-induced somatization have been reported in US samples of military partners, though varying according to stage of deployment.

The Forces in Mind Trust review found no research that outlines the impact of deployment specifically on partners of UK personnel and of the evidence that comes from the US, appears to lack good quality and systematically sound studies exploring the psychological needs of the military community.

Aims

Based on an absence of evidence, which highlights a lack of knowledge around the levels of psychological distress in military partners, links between the military lifestyle, deployment and mental health, as well as individual and trait factors that might be influencing mental health outcomes, the aims of this study are;

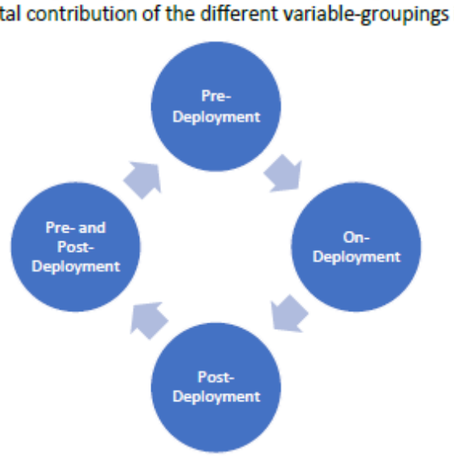
1. To identify the prevalence of anxiety, depression, stress, PTSD symptoms and attachment styles in a UK population of military partners.

2. To determine whether any differences exist on mental health outcomes and attachment styles between the different stages of deployment.

3. To identify any relationships, and the extent of these, between factors related to the military lifestyle (i.e. living status), deployment stage as well as demographic data and the outcomes of the measures.

Method

- Cross-sectional online survey
- Data was obtained from a cohort of British Armed Forces personnel partners whose partner had deployed in the past five years, was currently deployed or was due to deploy in the next twelve months; N=563 met criteria and agreed to consent
- Measures of distress: Depression Anxiety Stress Scales-42 items (DASS) and Perceived Stress Scale-10 items (PSS). Three self-report measures aimed at identifying attachment styles (Experiences in Close Relationships-Revised; ECR-R), defence mechanisms (DSQ-40) and trauma symptoms (Posttraumatic Checklist 5; PCL-5) were also used.
- Potential confounds may include historical and current mental health difficulties that they or their partners have experienced. Locations of deployments due to variations in areas of heightened conflict (including perceived), e.g., Afghanistan compared to Cyprus, and rank of partner may be indicative of perceived dangerousness. Previous traumatic experiences may also exacerbate outcomes on the measures. These were accounted for in the survey development.
- To determine the prevalence of psychological distress and attachment styles in military partners, basic frequency and descriptive statistics were performed. Unpaired sampled T-tests were then carried out to compare and determine whether any statistical significance exists between the mean scores of military partners on the depression, anxiety, stress and perceived stress sub-scales with the general and clinical adult populations. One-way ANOVA's or non-parametric equivalents (Kruskal-Wallis H), including post hoc analyses (Mann-Whitney) were performed to assess the impact of deployment stage on each of the mental health outcomes and determine whether any differences exist in attachment and defence styles according to stage of deployment. A four-stage hierarchical multiple regression was finally conducted for each of the dependent variables to examine incremental contribution of the different variable-groupings in accounting for the mental health outcomes of interest.



Results

The results indicate clinical levels of depression, anxiety, stress and perceived stress in military partners and significantly greater levels of distress when compared with prevalence rates in general adult and clinical populations.

A number of demographic and deployment specific variables appear to be associated with elevated levels of distress including age, length of relationship, a currently deployed partner and anxious and avoidant attachment styles. Analysis comparing the different stages of deployment found significantly higher depression and stress scores 'on' deployment compared to 'post' deployment, significantly higher perceptions of stress 'post and pre' stage of deployment compared to 'post' deployment and more avoidant attachment styles 'post' deployment when compared to 'on' deployment.

Conclusions

Findings indicate the need for more replicable research to provide evidence for the prevalence of mental health difficulties in a sample of UK military partners.

Longitudinal and repeated measure designs would provide a more reliable understanding and clarity of mental health across the stages of deployment. Qualitative accounts might provide a rich and in-depth understanding of the factors mediating and moderating the elevated levels of distress found in this study of military partners. Qualitative enquiry might also provide opportunities to explore other processes underlying the varied levels of distress dependent on stage of deployment, found in this study, and the implications of these.

Future research might need to consider how to reduce limitations associated with sampling and study design, though at present, the results provide preliminary support for more specialist and readily accessible mental health services for military partners.